The American Journal of

CLINICAL MEDICINE

Dependable Therapeutic Fact for Daily Use

M A Y

M C M X V I I

IT'S TIME TO GET DOWN TO BUSINESS

ALTHOUGH we are at war and while, very naturally, our first interest is devoted to medicine, surgery and sanitation as they are applied under conditions of war, it would be a serious error to neglect the welfare of those who remain behind. The sick must be attended to just as well as before; the mentally deranged require our equal care; everything must go on, the home physicians giving extra time in behalf of their brothers who are called to service. We have hardly ever been in a position to present a more varied and useful offering than this number of CLINICAL MEDICINE. See that your subscription is kept up to date so that you will not miss a single one of the unusually strong, practical, and interesting "war numbers" of CLINICAL MEDICINE.

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THE NEW YORK PHARMACAL ASSOCIATION
YONKERS, N.Y.

The American Journal of
CLINICAL MEDICINE
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Malaria: How Shall We Get Rid of It?

THE man who takes his old paper upon malaria, written twenty-five years ago, and proceeds to trim it to fit present conditions, might better put the historic document in the stove. So much of it would be obsolete that the small remainder only would disfigure the new production. Nevertheless, there are some few truths in our science that remain eternally true—we may use them as the bricks of Nebuchadnezzar's time have been utilized to build new and yet newer structures, for thousands of years. The successors of Cassander carried these bricks from the tower of Babel over to construct Seleucia; the Parthians transported them thence across the Tigris to Ctesiphon; the Arabs drew upon these quarries of bricks for Cufa, and the caliphs found the same inexhaustible supplies to afford them materials for the erection of Bagdad.

Bricks in our social structure have been transmitted to us from Ammurapi many centuries before the Babylonian monarch; and we hesitate to set out on a journey upon Sirday, because Jupiter dethroned Saturn, and the old chap didn't like it. The description of the invasion of a home by the malaria of the Mesopotamian swamps, engraved in cuneiform in the days of Agade, is as vividly true today as then.

Creasy did not enumerate all the decisive battles of the world. When Aetius baffled the Hun at Orleans or Hermann massacred the legions of Varus in the Teutoburgerwald, neither had the momentous consequences to mankind following the first squint of a scientist through two lenses and the primary glimpse into the world of the infinitely little. The Agadean knew he was there and denominated him a devil; we have seen him and given him a new name—and we acknowledge him to be a devil still.

The most momentous advance in our knowledge of malaria of late has been the discovery that man himself is the host from whom the she-mosquito obtains her spring stock of plasmodia for human destruction. We suspected various animals, and find the guilty one to be one most readily to be brought under our protective measures—and the one least likely to submit to them. Were it a question of inoculating the cattle or sheep, it might readily be accomplished, but man—it would be more arduous than any cleansing of stables Augean, to pass in review the entire population of the malarial sections, to detect

those in whose systems lurked the plasmodia and to eradicate the parasites with effective plasmodicides. Yet, by so doing, we should reduce the possibilities of malarial infection to the few who might escape disinfection by the imperfections incident to the practical application of the method.

Here, we have an illustration of the benefits that would arise from the adoption of the system that makes the medical profession the guardians of the people's health and the preventers of disease. Were every individual under the special care of his own physician, it would be an easy task to induce all to comply with such regulations.

One step we have taken that indicates plainly another, which remains to be taken: the parasite of malaria is an animal organism. We have found from studies upon maladies resulting from other animal parasites—syphilis, trypanosomiasis—the remarkable control exerted over them by the organic combinations of arsenic. This element has long been regarded as next in efficacy to the cinchona alkaloids in treating malaria. It remains to try out thoroughly the effectiveness of the arsenate of quinine as an antimalarial. We physicians are singularly indisposed to quit our ruts. In America, the sulphate of quinine is universally employed, where in other lands the hydrochloride or other salts are, deservedly, preferred. So, the great majority of us keep right on prescribing the difficultly soluble sulphate, and never give trial to any other.

It is our firm conviction that the arsenate of quinine is one of the best remedies to eradicate malaria from the human system. The top dose has never been fixed. That bold and skilful therapeutist, Henry Beates, administered it in doses of a full grain three or more times a day, with benefit, and no difficulties following. Has anybody pushed it further? Sodium cacodylate is being used largely, we are informed, both alone and in association with quinine, and both given subcutaneously.

Another remedy deserves a very much more general application than it has yet received, namely, berberine. We have established that this alkaloid has the power of contracting relaxed connective tissue. In the enlarged spleen of malarial subjects, this quality is so powerfully manifested that rupture of this organ, and death, has followed rash applications. But this meant doses of a scruple in a single day. Far less is sufficient so to contract the spleen as to force the parasites lurking in its parenchyma out into the general circulation, where they may be met and destroyed by the arsenic and quinine. As an average dose, 1 grain each of berberine and of quinine arsenic per day suffice.

Awaiting the time when the alimentary canal shall be shown to be a nesting place for these parasites, we may follow the unvarying experience of the older practitioners and keep the liver active and the bowels clear. No matter what our choice of antimalarials, this precaution is an essential for success—and for preserving the patient's life in strongly malarial districts. "To neglect the liver is death," asserted an old practitioner of the lowlands of Carolina, and we believe he was right.

Eradicate malaria from your clientèle by locating it in your patients.

Begin the treatment of every case, that does occur, by protecting the patient from the possibility of infecting the neighborhood mosquitoes. You can.

Eradicate the mosquitoes by stocking all fresh waters with minnows; by draining and cultivation; by kerosening the swamps. You may succeed.

Cure your patient as quickly as possible, by using the most effective antimalarial agencies in maximum dosage.

Hold your patient incommunicado, as to insect-disease-carriers, until you are laboratorily sure he is cured. And —

Wage war, unceasingly and unrelentingly upon all the insects that carry disease-germs and look upon every species of insects as guilty, until proved innocent.

Get into the habit of looking for the silver lining of the cloud, and when you have found it, continue to look at it rather than at the leaden gray in the middle. It will help you over many hated places.—A. A. W.

WAR: LOOKING BACKWARD AND LOOKING FORWARD

To the anthropologist, war is perfectly comprehensible. That strange animal, man, can go along in the even tenor of his way just so long, and then he is obliged to let go. He will train for a pugilistic set-to and go through it, but then he must go off training for a season, let his tension relax, his muscles rest, and he himself revel for a period in the erstwhile forbidden fruits. The moral tension of the Revolution became unendurable, and the wild debaucheries of the second Charles's era followed as naturally and inevitably as sleep follows exhausting exercise of the body. The worthy Deacon takes up the collections, heads the Sunday school, and upholds the

moral standard of the community just as long as he possibly can, and then goes to New York "to buy his spring goods."

The world had been good to the limit of its endurance. It had been attending strictly to what Carlyle asserted was the deity of man, real man, "getting along in the world." It had been constructing railways, erecting factories and trusts, building bigger and yet bigger ships, and piling up bigger and still bigger fortunes quite long enough. It had been a century since a real man's-size world-war had been perpetrated. The Crimea, our Civil war, the débâcle of 1871 had been local blazes, mere boils on the skin of the body politic; it was high time for a fever requiring general bloodletting on a scale commensurate with the gigantic increase in the world's growth and the quantity of its circulating medium. So, it came.

Will it ever be different? Not so long as man is what man now is. The lofty altruism that disdains war and recognizes the universal brotherhood of the entire race is appreciated enough to make it a life-principle by not more than one-hundreth of one percent of the world's population; and until this altruism becomes the vital principle of the influence-majority of men it is an impossibility as to practical application. It is all right for neighborhood centers. It is good for the individual who is through with the labors and cares of actual business and has his scads safely salted away in government bonds where he can touch only the income. But, to the mass of mankind, altruism is no more applicable than it is to the hungry dogs that find the butcher's door open and nobody on guard.

Since even the devil has had his apologists, we may ask whether there is not a bright side to war. Or at least, since no man is without some tiny sparklet of good about his being, is there not some small redeeming feature to the great devouring Moloch?

War is a conflagration, which destroys indiscriminately and, yet, does some good. It takes the stately skyscraper, the ancient and revered cathedral, but it also sweeps away the musty purlieus where disease lurks. The great fire of London destroyed property beyond calculation, but it also effectually ended the plague, which had persisted in the slums despite every effort at eradication. It takes the reeking tenements where disease and crime engender their malefic progeny, and it clears the ground for sanitary structures.

War is a mighty stimulant. This one now raging is a gigantic bacchanalian revel. It sees the modern Alexanders setting the torch to thousands of Persepolites. The venerated fanes of the past crumble in ruins before the modern high explosives—but, would not China be the better were her ancestor-worship to be likewise demolished? Better one row of model tenements than any hoary ruin of a temple. Better a land like the ancient plains of Accad and Shoumir, restored to the marvelous productiveness, described in Holy Writ, by irrigation, than the Vatican's miles of art galleries.

The best of war is, its ruthless sweeping away of wornout impediments. The czar of all the Russias has seen his crown tumbling from his head—and he will have company before this thing is settled. Wornout methods of warmaking are gone into the discard. Under the plumed helmet of Mars, we see the lineaments of Vulcan. On his right stands Mercury. The blacksmith and the chemist ride off to the fray, while the plumed knight runs a farm-tractor. Venus has donned the Red Cross. Jupiter is working a 42-centimeter gun, Neptune rises to the surface with his submarine, Apollo looks down from his aeroplane, and Juno has marshalled her flock of goddesses to carry on the business and reap the harvests. Pluto and Proserpine are exceedingly busy providing quarters for their innumerable new boarders.

Now, having climbed to the lofty heights of Olympus, please, tell us how we are going to get down to earth again. No way we see except to take an Icarian plunge—so here goes—

The war has taken many an acknowledged reform out of the field of conjecture and dilettante discussion and brought it into actuality. We might talk, talk, talk until doomsday about the organization of society, about socializing various public utilities, about ending senseless and destructive competition and cheapening necessities by wise regulation—the war has made these things real and actual.

Two of these admitted needs we doctors are going to see put into being if our country gets into the scrap. We shall see the medical profession organized in accordance with present conditions. We have enormously increased the cost of a medical education in time and cash. We have made it so difficult to pass the required tests that only really superior men can meet them. We have so changed our means and methods of treatment as to add hugely to their cost. The war has occasioned a frightful rise in the prices of everything that we need as physicians and as citizens. The number of recruits to our

profession is falling off just as the demands of the public upon us for services are increasing. We are cutting off our own means of living by public and personal sanitation, by teaching the people how to get along without us.

Now, what are we going to do about it, if not to organize ourselves on a cooperative basis? The war may make this necessary, relieving our medical body, somewhat, of the birth-pains of the transition into this new economic life.

But, whatever the problems of the future, we can not, we must not forget the great task that lies before us today, a task in which the doctor must play his part bravely like other men. Our country is mobilizing its material resources and taking stock of its manhood. This war will be no holiday excursion. It will not be finished soon. It will be bitter, exhausting, terrible—bringing into play all the resources of the nation. It will "try men's souls," separating the chaff from the wheat, the loyal from the disloyal, the weak from the strong, the cowards from the brave.

Where does your community stand? What can you do? What can I do? These are questions we must be asking now, for I take it for granted that every reader of these lines loves this great country of ours, loves it with an undivided allegiance, and believes that in fighting for it he is fighting the battle of democracy and of human liberty, and "with malice toward none and with charity for all." Let every man bring home to himself the fact thet *he* has a duty to perform, and then let him shoulder his burden with a stout heart, filled with the patriotic passion that is so contagious.

It is said that 25,000 physicians will be needed for our army and navy. What are you going to do?

I believe in getting as much good outen life as you kin—not that I ever set out to look fer happiness; seems like the folks that does, never finds it. I jes' do the best I kin where the good Lord put me at, an' it looks like I got a happy feelin' in me 'most all the time.—Mrs. Wiggs.

PREVENTION OF RACIAL DEGENERACY

All thinking people, especially publicists, are, today more than ever, giving serious thought to the danger of impending deterioration of the white races, in view of the abnormal conditions of life and habits forming part of our modern form of civilization, but now, more particularly, the decimation of the best portion of the potential fathers of the future generation as well as the constitutional weakening both of the young men eventually returning home from this frightfully exhausting war and of the young women and girls weakened through the prolonged nutritional deprivation—the latter fact already becoming an alarming factor in the central empires, and more so in France, in the rapid spread of tuberculosis.

These remarks are prompted by seeing a brief notice about a book issued last year by Wilhelm Schallmayer (Leipzig: Repertorienverlag) in which he problem of race-hygiene is scientifically examined into. While, so far as Germany is concerned, the author can not as yet discern any deterioration of the stock, he fears this as directly imminent, so that the prompt adoption of preventive measures is imperative; and as the immediate and prime cause he accuses the diminishing birth rate, and this more particularly among the higher classes of society.

Schallmayer does not advocate unlimited size of families, but, rather, a judicious regulation in conformity with the needs of the economic conditions and racial hygiene; also, of course, he considers the control of the detrimental factors of alcoholism and enereal disease. Entering further upon the recommendations of the author, the reviewer for the *Wiener Medizinische Wochenschrift* is inclined to dissent. While his scientific deductions may be correct and certain of results, still, they are impracticable in real life, it is contended.

Laws directed against the diminishment of childbirths are absolutely inoperative, we are told, while those designed to favor large families accomplish exceedingly little. So far as other legislative interference is concerned, notably the demand for health-certificates, its only leads to multiplication of illegitimate childbirths that can not be controlled by law; moreover, such laws are largely circumvented, the critic pointing to the United States, where more than elsewhere the pure letter of the law is adhered to, while the spirit of the law is being laughed at.

The point finally made by the critic of all those thinking like Doctor Schallmayer is, that greatest success in the direction of race-hygiene lies in the direction of enlightenment of the people—and to this end, he declares, this book will prove of great good.

THE ALCOHOL PROBLEM

The present era has been characterized by an unprecedented advance in the war against alcohol. The astonishing benefits following

the Czar's demolition of the Russian liquor trade encouraged the other allied governments to seek for similar economic advantages; and all over Europe the sale of alcoholic beverages is constantly being restricted more closely.

We have ever been peculiarly, even absurdly, sensitive to European influences. The native American prohibition movement was a much needed protest against the slavish truckling to foreign sentiment; and, while its narrowness killed it politically, it contained elements of truth that should have lived. The proposed limitation of privilege to the native-born was wrong enough to kill, by rights, any party that advocated it. The protest against deprecation of all that was American and the exaltation of all that was European was so justified that it is hard to realize why it failed. This idea was the basis of the Thomsonian movement and gave it a popular favor strong enough to sweep medicine from its old moorings and forever to revolutionize its methods of practice.

Still we are looking to the East and follow its lead. So, we see the wave of prohibition sweeping over the land and engulfing the liquor trade of one state after another, until national prohibition is in sight. Moreover, its advocates insist upon real reform, upon prohibition that prohibits, and the "bonedry" enactments are fast taking place on the tables of statutes. The admirable enforcement of the liquor-laws in Vermont is being imitated universally and the sight of a drunken man in public is becoming ever rarer.

Yet, the output and presumably the consumption of alcohol does not seem to lessen, at least not to the extent one would expect. We still are called upon to treat patients suffering from the consequences of drink, and it will be long indeed, if ever, before this group of maladies ceases to figure in our case-books. Since sera, vaccines, bacterins, and the like do not apply in this class of affections, we may take a glance at our resources among the older remedies for assuaging the ills born of alcohol.

The morning-vomiting of drunkards subsides under copper arsenate, 1-100 grain in 2 ounces of very hot water, taken upon arising. Thick, glairy mucus calls for a preliminary lavage with warm soda solution.

Capsicum in moderate doses promotes digestion, induces sleep, quiets delirium, and lessens the desire for alcohol. An incessant unquenchable thirst for liquor is relieved by very large doses, even a teaspoonful, of the powder.

Small doses of quinine arsenate or valerianate steady the nerves and tone the stomach.

Strychnine nitrate removes the depression due to stopping the use of alcohol, braces the nerves, and often substitutes the strychnine habit.

Brucine replaces strychnine whenever the stomach is tender or irritable—brucine being locally anesthetic.

When the wife asks us for a remedy to administer to her husband without his knowledge, to make him quit drinking, provide her with atropine, and instructions. The cerebral fulness it occasions renders the thought of more drink unpleasant. Glonoin in the liquor aids a heap. The net benefit may be questionable, but nothing else fills the bill so well, unless it be the following:

Tartar emetic. A grain or two in the toper's soup is likely to make a half-drunken man feel that he had better stop the booze. Very effective, if unsuspected.

For the "horrors," nervous erethism. We may choose between capsicum, monobromated camphor, or large doses of a bromide, say, 5 grains of sodium bromide every half hour. Since debility predominates, avoid these latter and all depressants.

After the alcohol has been stopped, zinc phosphide, 1-6 grain before meals, continued for a week, constitutes a powerful means of arousing the nerve-centers and reestablishing moral control. Do not laugh at this—first try it. This also is useful if obstinate neuralgia occurs then; likewise for insomnia.

Sometimes we meet a case in which the thirst lies not in the brain but in the congested, irritated throat. Then local remedies for this condition accomplish wonders.

Macrotys sometimes fits in when there is dyspepsia, with feeble or irregular heart action—not decided enough for digitalis, yet, pointing to efficient medication being required.

For tremors or for alcoholic epilepsy with anemia, alternate weekly picrotoxin with zinc phosphide. Two remedies little known, but of tremendous power for good.

If we relieve the gastric catarrh by giving the oxides of silver and zinc, alternating weekly, we get rid of the craving the seat of which is in the stomach.

The man faces some terrible emergency, such as his wedding, and gets beastly drunk. Give a hypodermic injection of pilocarpine, or, if violent, of apomorphine; then a Turkish bath. Lastly, a good bracer of hot clam-broth. He will be all right.

For violent alcoholic delirium, apomorphine. But, watch for depression, they

collapse like a sick oyster. Be ready then with hot baths and capsicum.

Always feed and eliminate. Prescribe raw oysters, eggs, beef, pickled meats, hot clam-broth, turtle-soup (plenty of capsicum with either), raw fresh fruit-juices, lemonade, aerated waters.

Emetine subdues incessant craving for drink and induces sleep in those on the verge of delirium tremens or, when over it, give full doses hypodermically. Purge. Sweat. However, always watch the heart. An acute alcoholic is one of the easiest persons to kill.

There is no duty we so much underrate as the duty of being happy. By being happy we sow anonymous benefits upon the world, which remain unknown even to ourselves, or, when they are disclosed, surprise nobody so much as the benefactor.—Robert Louis Stevenson.

THE DIMINISHING TUBERCULOSIS MORTALITY

A few weeks ago, the Chicago newspapers contained articles referring to the fact that the mortality from tuberculosis in Chicago had been lowered noticeably in the last few years and that the commissioner of health, in an interview, had confidently expressed the opinion that the solution of the tuberculosis-problem for Chicago, might be anticipated if this diminution in the mortality rate were to continue.

Undoubtedly this is true; and it would be very delightful *if* it were not for the *if*. Manifestly, *if* the mortality rate from tuberculosis continues to diminish from year to year, it must, ultimately, reach a very low figure and even the zero mark. And, just as certainly this would solve the tuberculosis-problem—*if* this same absence of deaths from tuberculosis could be maintained.

Unfortunately, a great many factors are operative, especially in the big cities with their tenement problems, their socioeconomic questions, their alcoholism, their neglected children, and all their other problems that are of importance in the etiology of tuberculous phthisis.

The Commissioner of Health is not the only one, however, nor is he the first one to voice such a prophecy, but one that could never be maintained or supported by a student of epidemiology. Before the Epidemiological Society, in London, a paper was read, in 1898, on the prospect of abolishing tuberculosis, in which the author stated that the annual death-rate from phthisis, in England, had declined steadily from 3.8 per thousand living in 1838, to 1.3 per thousand living in 1896. The first great fall was observed in the period of 1840 to 1850, when land-drainage was being carried out extensively. The mortality then remained nearly stationary until 1867, since which time the decline has been continuous, corresponding with sanitary improvements, the better ventilation of houses and workshops, and the higher standard of living among the working classes.

For the future, this same author considered the outlook encouraging, and he believed that, judging from the success that had already attended past efforts for the general improvement of public health as well as from the great though undesigned subsequent reduction in the mortality from tuberculosis, "England might confidently look forward to the practical extinction of this disease at no distant future," as the result of the persistent cooperation of the sanitary authorities, the medical profession, and the public in measures intelligently directed to the end in view.

On the other hand, several articles have appeared within recent years in medical journals denying that the modern anti-tuberculosis campaign had been of any value at all in reducing the tuberculosis mortality, but refering any reduction observed in isolated instances to improved sanitation, to better conditions of living, better wages, and other improvements. The author of these articles, whose pessimistic attitude is in sharp contrast to the optimism of the Chicago Health Commissioner and of the English author referred to, refuses to admit that there is any salvation from pulmonary consumption, except in the improvement of our physical and mental environment and in the moral betterment of the human race.

And thus the question stands unsolved. Without a doubt, the campaign against tuberculosis has done much in lowering the frequency of disease, for the reason that nowadays tuberculosis can be recognized and diagnosed earlier and that, consequently, measures can be taken, and are taken in many cases, to prevent its progression into the destructive phthisical stage. Likewise, with the general improvement in sanitation, and in the prevention of infection, with greater attention to wholesome, common-sense living, many of the conditions encouraging the development of pulmonary diseases are being curtailed, and the antituberculosis crusade must be credited with an undoubted success, even though it is quite impossible, epidemiologically, to anticipate the solution of its problem at any period that can be fore-

told. Such a solution could be expected only if the socioeconomic conditions under which the great majority of the people live were changed altogether; more particularly if alcoholism, crowding, overwork, and excesses of every kind could be abolished and—most surely—if it were possible to do away with poverty, shiftlessness, and unthriftiness.

"THE AMERICAN REVIEW OF TUBERCULOSIS"

Come to think of it, it is rather strange that this country of ours, which is one of ready and aggressive journalism, has been without a tuberculosis journal of its own for so many years; just as it was surprising that the National Association for the Study and Prevention of Tuberculosis was established only after most other countries had had their tuberculosis associations in full operation for a number of years.

If now the National Tuberculosis Association has at last undertaken the publication of a monthly journal devoted entirely to the study of the disease that occasioned its own existence, there, surely, can be no objection to another special journal, for the reason that its field is so very important and rich and the interest in it has become so universal that there should be no difficulty in securing a sufficient financial and moral support for the new undertaking. Germany, France, Italy and England have had their special tuberculosis journals for years; indeed, some of them have more than twenty and thirty volumes to their credit, and their files bear witness to the eager and industrious research that has occupied the minds and the time of numerous investigators.

Not that *The American Review of Tuberculosis* is the first undertaking of its kind in our country. Between 1898 and 1903, *The Journal of Tuberculosis* was published in Asheville, under the editorship of Dr. Karl von Ruck. At that time, as in other instances before and since, Doctor von Ruck was in advance of his time and his undertaking had to be given up for lack of support, inasmuch as *The Journal of Tuberculosis* was published entirely at his own expense and the medical profession had not then been trained sufficiently in tuberculosis-work to manifest an interest commensurate with its importance. Fortunately, financial considerations probably will not have to trouble the publishers of the new *Review*, since this has the backing of the National Association and undoubtedly will receive sufficient support from its large membership.

Among the editors of *The American Review of Tuberculosis*, some of the foremost American tuberculosis-men are represented, even though we miss names like those of the von Rucks, of Dr. Francis M. Pottenger, and several others. Mechanically the new journal is very attractive, and the initial number promises well as to contents and makeup for the future. The subscription price to members of the National Association is $2.00 and to nonmembers $3.00 per volume. It is to be published monthly, one volume comprising twelve numbers. We wish the new tuberculosis journal much success and usefulness and beneficial activity.

All life is but one Revelation of God, all humanity but one Kingdom of Righteousness; and whoever is clean of hands and pure of heart, is on the road to the sunlit hills of blessedness forever.—Rabbi K. Kohler.

THE PROSPECTS OF THE CLINICAL USE OF ANTERIOR PITUITARY

The abiding faith in the *vis medicatrix naturæ*, which many physicians have persistently manifested at all times, appears to have found a vindication, through the researches of physiologists and clinicians, that is almost startling in its convincing nature.

Anatomists, for a long time, have been familiar with a set of glandlike bodies in the mammal organism, some of them very small. the probable purpose or function of which continued a profound mystery until quite recently. Now, however, we know that these socalled ductless glands are important factors in regulating the functioning of the vital organs, and that they initiate and mobilize the first defense of the body against injurious influences; moreover, that, by means of increased or diminished functioning, they are capable of stimulating or of slowing those vital processes which they regulate under normal circumstances. More marvelous, still, it appears that these various glands with internal secretions may act vicariously, so that, if one of them has lost its power of functioning, another may replace and substitute it in the animal economy.

Speaking about the obscure role played by the pituitary body, in an editorial article appearing in the initial number of *Endocrinology* (the "Bulletin" of the society for the study of the internal secretions), Dr. Henry Harrower expresses the belief that it is not amiss still to attribute to this gland an element of mystery; for, while our present knowledge

of the pituitary body is quite considerable, thanks chiefly to Cushing and his associates in Baltimore and Boston, there undoubtedly remain several things yet to be learned about this really wonderful organ.

Doctor Harrower gives a brief résumé of the various modes of action which the anterior lobe of the pituitary body, and more particularly its active principle tethelin, has been shown to possess. The administration of this substance produces a striking effect upon bodily growth, according to Brailsford Robertson (who discovered the tethelin) and his associates in the University of California. Richter, of St. Louis, states that tethelin undoubtedly is of value for controlling the main symptoms of Graves's disease; also, it seems established that the heart hurry, nervous manifestations, and metabolic unrest can be subdued by a course of treatment with anterior pituitary substance. Strange to say, Spears, of Louisville, making a trial with this remedy in an entirely empirical manner, in a case of epilepsy of twenty-three years' standing, succeeded in arresting the seizures, until they ceased entirely at the end of four months and had not recurred eight months later. The positive influence of the remedy in this case seems to be supported by Tucker's experiences in nine cases of epilepsy. Finally, Stelwagen, of Philadelphia, recently reported six cases of functional male impotence in which a short course of treatment with anterior pituitary substance resulted in surprising improvement and even in complete relief from this distressing condition.

We agree with Doctor Harrower that anterior pituitary substance should be thoroughly tried in the crucible of the clinic, and, the more so as the possibilities of harm seemingly practically are negligible in comparison with those attendant upon the administration of the posterior pituitary lobe preparations.

The sacrifices we have to make are never the exact sacrifices we would have chosen to make.

—A. P. Sinnett.

ANTRUM INFECTION, AND CHRONIC DISEASE

Curious, how much one may find if he looks for it. Just now, the entire profession is looking for pus-pockets, and with very fair success. Not long ago, it was sick appendixes; before that, it was indisposed ovaries. Look back over the last fifty years, and how very many things have not we been following up since the craze for tenotomy immortalized by Zola? Yet, there always have been just as many pyorrheal cases before Riggs, as many intestinal kinks before Lane. There are quite as many gonorrheal pelves, tight renal capsules, rectal strictures, and sphincter spasms as there were when each of these, in its time, was in style.

T. F. Driskill, a Texas dentist, had his attention forcibly directed to an instance of suppuration in the antrum of Highmore—forcibly, because he found that he himself had long been suffering from this condition. Nothing like a bit of personal suffering to give one a keen interest and insight into a malady—neuralgic Anstie gave us a book on Neuralgia that still is unsurpassed; deaf Bishop is our first master on otology; Clements' studies of angina pectoris—the affection that eventually killed him—possess a vividness such as no other writer on that topic equals.

So, Doctor Driskill studied antral diseases—and looks for it; so successfully, in fact, that in his rather obscure little Texas town he has amassed a remarkable list of cases of infected antra.

Moreover, by a judicious choice of remedies and persistence in their application, Driskill has succeeded in curing this obstinate condition to an exceedingly creditable degree. His first report may be found in *The Dental Summary* for October, 1915. In this article, he details the histories of some twenty patients, selected from a long list at his command. The article is attractive, because of the earnestness and simplicity with which it is written, the absence of self-gratulation, and the fact that the author has found so many examples of this little-discussed condition by simply looking for it. He concludes his paper with the rather commonplace observation that "no pyorrhea-case should be dismissed until the disease is cured"—that is, it would be commonplace, were it not that Doctor Driskill's observations have satisfied him that it is needed.

Some of us seem to have been more interested in studying pyorrhea than in curing it. The studies of Eugene Talbot should have opened a new epoch in its history, pointing at once to the underlying cause in fecal autotoxemia and indicating the ready means for cure. The numerous articles upon this disease that have appeared since then, but make no reference to Talbot's work, can be accounted for only on the ground of ignorance and the failure to appreciate its importance, unless it be that smallish jealousy with which we Americans view the achieve-

ments of our fellow citizens. Laplace was wise—he made a world-name for himself by suggesting for a certain purpose, the addition of tartaric acid to mercuric-chloride solution; but, then, he made the suggestion in Europe; while the American Dixon anticipated the European Koch in the publication of a remedy against tuberculosis, prepared from tubercle bacilli, by several months. Yet, it is only now that his prior work is being acknowledged more generally.

Doctor Driskill has directed attention to a fruitful source of disease in antral suppurations. It is as likely to cause general illness as is Riggs' disease or as will tonsillar pus-foci, and we should look to the antrum as well as other points in our diagnostic work.

Highly significant are the "diagnoses" that had been perpetrated in some of the cases before Driskill took charge of them—ocular paralysis, advanced tuberculosis, extreme bronchial disease, asthma, neurasthenia, anemia, catarrh "until life was a burden," "nervous breakdown," "throat trouble, bronchitis, and kidney disease," "hay-fever," among them, besides some others in which no definite diagnosis had been made. It does seem that even the poorest kind of doctor should be able to recognize a difference between antral disease and well-advanced pulmonary tuberculosis, still, this mistake seems to have been made more frequently than any other.

Better look for antral empyema as well as for tonsillar and gingival pus-foci, and other focal infections.

"Today we are waging one of the most devastating wars that the world has ever seen. Tomorrow, tomorrow, not perhaps distant tomorrows, war may be abolished forever from the category of human crimes. This may be something like that fierce outburst of winter which we now are witnessing before we complete the time of the summer."—Lloyd George.

THE BEGINNINGS OF DISEASE

When a man supposedly in good health begins to feel weak and tires easily, finds a growing indisposition to exertion, legs getting wobbly, easychair growing more attractive, after-lunch nap becoming customary, what is the matter with him?

Don't let yourself be put off with the easy hypothesis of "getting old." No man gets old prematurely. There is a reason for every phenomenon in nature. Age is so purely relative a matter that we must go further and ask, "Why is this man growing old?"

Cancer is a malady that is characterized by growing debility; if, though, the most attentive survey fails to detect any sign of such a growth then we look to see whether a cancer may be affecting the liver. Rectal cancer also may exist for a long time without any apparent symptom, aside from an increasing difficulty in securing complete emptying of the bowel.

Diabetes is another of those insidious affections that come like a thief in the night. We have had people come to us who had not the faintest suspicion of having diabetes, but wanted help for itching, impotence, boils, irritability of the bladder, and so on, but examination of the urine disclosed the presence of sugar in large quantities.

Nephritis is likely to be indicated by an increasing tendency to headache, dizziness, anorexia, nausea, disturbed sleep and bad dreams, pasty complexion, and other significant evidences, long before the swelling of the ankles toward evening attracts attention. But, often, the first knowledge of the trouble comes when the victim, supposing himself in perfect health, is examined for life insurance.

A sense of stuffiness about the chest, a curious disposition to respire voluntarily instead of automatically, but this relieved by an extra pillow under the head, may signify a beginning weakness of the heart that demands investigation. Shortness of breath upon slight exertion has been read into our medical classics.

A disposition to drink water toward evening may be the first evidence of pulmonary tuberculosis—to the patient—although he will be surprised to learn that his little hacking cough or throat-clearing has been taken notice of by his friends long before he himself suspected its significance.

Another highly significant fact is, the habit of dropping into the saloon a little before noontime for a drink. Aha! you didn't know you were doing this? Well, we have seen you go in to Joe's every day this week at about the same hour, around eleven o'clock. Beginning to fail, to need a bracer, in order to get through the day's work? Sure you're as good as ever; a mere accident; don't really need it, but just felt that a Manhattan would taste good? Yes, and on your way home in the afternoon you had a mug of Billy Patterson's old musty ale, didn't you?

We do not need to discuss the meaning of these various things here recounted.

If there is one lesson taught above all others by our modern science, it is, the necessity of taking the human ailments early. The beginnings of disease should be watched,

their meaning apprehended, their causes hunted out, the remedy applied. As true medical science advances we must see the evil still earlier in its course, and learn to break up the vicious pathologic sequences before material lesions shall have been inflicted. No mortal man can reconstruct a cell or a fiber; but if he is learned in his physiology and apt to recognize deviations from normality of function, he will take his cases in time to prevent functional maladies becoming organic lesions.

What is normal?—"In the laft analysis, we mean by normal, persons who do as we do. Behavior which does not please us or is ftrange, is abnormal. . . . . I am normal and you are if you do as I do, otherwise you are abnormal."—Amer. Jour. Urol. & Sexology.

THE DIAGNOSIS OF EARLY PULMONARY TUBERCULOSIS

One of the main conditions for the successful treatment of tuberculous disease is its early recognition. This statement may, to many, seem gratuitous, and, yet, there is ample cause to suspect that in altogether too many cases the former hesitation on the part of the physician to make a diagnos s of pulmonary tuberculosis still prevents him from announcing this disease when there actually is ample cause for it, if, worse still, he does not fail altogether to recognize the signs that should cause him to declare its presence. It still happens that physicians will "suspect" tuberculosis when the sputum examination already shows tubercle-bacilli and that they quite positively and emphatically deny its presence when the sputum examination is negative.

It is fully understood by men who have devoted much study to the subject, and should be realized fully by the general practitioner, that a diagnosis of pulmonary tuberculosis, when delayed until tubercle-bacilli may be found in the sputum never is an early one and that it then must be one of mixed, or secondary, infection and of pulmonary *phthisis*; that is, the destructive stage of tuberculosis which in almost all cases is consequent upon the associated infection.

The skilled clinician should not find it overly difficult to establish the diagnosis of tuberculous disease in the lungs at a time when the tuberculous focus as yet is "closed"; when communication with the outer air and, therefore, associated infection has not yet taken place, and when, in consequence, other things being equal, the chances for recovery are so much better.

The question, then, arises as to what are the signs upon which such a diagnosis may be based in the absence of positive bacteriological findings and what combination of symptoms will justify the diagnosis to be made.

The problem is considered, in an interesting and instructive communication to *The Boston Medical and Surgical Journal* for March, by Dr. J. B. Hawes, 2d., of Boston, who claims, justly, that even in the absence of local pulmonary signs of disease a diagnosis of pulmonary tuberculosis may be made purely from the constitutional symptoms. In an analysis of a series of cases observed by himself, Doctor Hawes found that in 26 cases he had based his diagnosis upon the history and presence of constitutional signs and symptoms; in 31 cases, on purely local signs; while in 136 the diagnosis was based upon both local and constitutional signs. This leaves out of consideration 87 cases of hemorrhage, in which the diagnosis was self-evident.

It is of importance to mention that chest-signs, such as dulness, rales, and so forth, were present in only about 65 percent of the total number of cases considered. A fact still more surprising was, that 53 of these patients denied having had any cough or expectoration. Even in incipient tuberculosis, we have come to look upon cough, whether accompanied by expectoration or not, as such a constant phenomenon that this high percentage in which there was no cough certainly appears remarkable.

The author's conclusions, based upon his personal observations and upon the result of an inquiry among about fifty physicians in Massachusetts who all were doing a certain amount of tuberculosis work, prove the necessity of utterly putting out of one's mind any preconceived picture as to what form incipient pulmonary tuberculosis should take or of any definite group of symptoms, local or general, it should possess in order to be recognized. Hemorrhage may or may not be present; cough and expectoration are not necessary accompaniments; signs in the lungs may be lacking; the temperature may be high or subnormal; a rapid pulse is not always present; loss of weight or strength or energy does not always occur; in fact, no one or not any two signs or symptoms are essential to a correct diagnosis. In fine, to quote Doctor Hawes' own language:

"Common sense, patience, and painstaking thoroughness on the part of the doctor are the true essentials in arriving at the truth. It is more what the physician has in his head

and less what the patient has in his lungs on which the correct diagnosis and the patient's life depends. The stethoscope used less and the thermometer and common sense used more would vastly better the present state of affairs, while of still greater benefit would be the imparting of these facts to our medical students, who now have to wait until sad experience and unnecessary tragedies in the early years of their practice have taught them these essential points."

There are some folks eccentric in
The way they tell their views,
It's "speculation" if you win
And "gambling" if you lose.
—Washington Star.

A RUNNING FIRE OF COMMENT

Dame Nature has a way of smashing the dearest of our mind-children. Just as we get the conception of a bacterin for every disease, consequent upon a microbe as the cause of each, some such knockout as that occurring at the New York Babies' Hospital will happen, where many times in the respiratory affections of infants Doctor Williams found that there were two or more different organisms engaged in the destructive attack. Influenza-bacilli joined with the tubercle-, pertussis-, diphtheria-, and other microbes, while nearly always the pneumococci or streptococci enlisted also. And thus it is that we are forced back to the old shotgun policy and the polyvalent bacterins must receive our sanction—as does the autogenous vaccine.

One likes appreciation; and no greater compliment could be paid than the one given us by a good friend recently. "The reason," said he, "why THE AMERICAN JOURNAL OF CLINICAL MEDICINE is so popular is, because it has from the first number of the old ALKALOIDAL CLINIC sought to make better doctors of its readers. Instead of preaching the doctrine of sending all our patients to the 'big' men, it has taught us how to do our own work and keep our patients at home. It has taken hold of the work of the great ones and so presented it as to enable the 'little' fellow to do the same things himself. While it has not especially favored surgery, the journal has had no small part in elevating the number of really expert surgeons from a few in each great city to many thousands in every large and small city, town, and village throughout the land." We doff our chapeau in acknowledgment. We would rather feel that we had influenced the practice of medicine for the better than see our waiting-rooms thronged with patients coming from far and near.

The army and navy want at least 500 recruits for the medical corps. If war really comes, they will be forthcoming. We might spare several regiments to be formed exclusively of eminent surgeons; and, armed with scalpel and bistoury, catlin and probe, turn 'em loose on the affrighted foe. But, in times of peace, when patriotism does not impel men to enter the service, it is right difficult to induce $10,000 men to apply for $2000 jobs.

Should real war take on the guise that it has assumed in European countries, and American manhood be mobilized and they march away by the millions, every man capable of attending the sick will be needed. There can be no talk about retiring, then. The ablebodied must march with the soldiery and the erstwhile superannuated must leave their orange-groves and chicken-runs and take up anew the duties of active practice.

The organization of the profession and rearrangement of its relations with the community which we have openly advocated, and which is becoming a common topic for discussion and essay, will then be forced upon us as a necessity. Withdraw 25,000 of the most active of our men to attend the needs of five millions of soldiers, and the gap to be filled will be huge. The duties of the profession will be largely increased at the same time. But, if we are organized so as to constitute the doctor the guardian of the public health, the preventer of disease, there will be a change for the better comparable with that of Russia following the abolition of the liquor trade.

One can not but acquire a certain degree of respect for the devil. He sure is onto his job. Many a person thinks himself or herself a Christian, and, yet, goes through like serving the devil faithfully—and never suspects it. She goes to church regularly, never misses any religious exercise, reads a chapter and says her prayers morn and night. But, also, she never misses a chance to say things to make people feel bad; she retails all the nasty speeches that folks are goaded into making about their neighbors, and thus makes more trouble in a community than will any shyster lawyer. She can not endure to see anybody happy, but must at once proceed to take the joy out of life. Religion is to her a chastened spirit. Christianity a groan. The stories of the life of Jesus of Nazareth, that have come down through twenty centuries, contain nothing jocular, nothing humorous;

yet, while they are what one would wish as to the Man animated by so lofty a purpose as His, they are permeated by a kindly, loving, merciful spirit that recognized human infirmity and forgave it. He always forgave and He cured. The Man to whom little children flocked in unconscious security, He whose severest admonition was, "Go and sin no more," found a loving response in every human heart, whether it deemed Him divine or merely a godlike man. Nowhere in the four gospels is there recorded in Him a trace of selfseeking, envy or animosity; but, rather, a kinship with such great souls as his who said, "With malice toward none." How can a woman read her Bible every day and take from it nothing but the distilled essence of Satanic evil? Surely, the only supposable reason is, that his hellish majesty blinds her mind to the divine truths.

The man who can laugh over his own folly, is still a good ways from being a fool.

FEAR

The suggestion has been made, and most wisely, that the best way to train our new levies is, to put them in the battle line. Not but that they'd run—raw troops always do: but when they saw the coolness with which the seasoned troops receive Fritz's offerings they would quickly lose their apprehensions.

Fear defeats armies. Fear drives men to death. A woman sat sewing in her flat. A fire started on the back stairs. There was a broad front stair, unencumbered, down which she might have walked in safety, or she could have sat still in her chair, without any harm coming, until the fire was extinguished. But, under the domination of uncontrollable terror, she rushed down the back stairs directly into the fire and lost her life.

Fear created deities. Out of the dark, the great mist-ensbrouded unknown, rushed swift and awful death upon terrified man; and the cowardly creature learned to see an angry god in the riven storm, the swift-rushing river, the overwhelming surges of ocean, in any and everything that was capable of doing him harm. The conception of a beneficent deity, a god of love, whose protecting arm is a sure refuge in times of trouble, came later, and was so foreign to that of a god who is a consuming fire that even to this day very many who believe they worship the true God are devotees of Moloch.

In his great novel Zanoni, Bulwer tells of the alchemist-astrologer, whose initiation began with his facing and overcoming the grisly Dweller of the Threshold, the Fear of Death.

In his youth, the present writer feared dogs greatly, and this until he was attacked by one, beat the animal off with fist and foot; then all apprehension of everything canine ceased. Years later, he descended into the Valley of the Shadow of Death, faced the fearsome Dweller and found his courage revived, until he could look his enemy squarely in the face, neither content nor fearing to die. Unexpectedly the fear of death departed from that moment for good.

How eternally true it is that, if we face the devil boldly, he will flee from us. In all the life that now nears the limit of three score and ten, we have never yet known a trouble or a difficulty that did not reduce to manageable proportions when faced squarely.

We removed a woman's breast for cancer. The growth recurred, and we removed that. Some months later, a little nodule appeared in the cicatrix. Apart from this, the woman was in the best of health, all organs sound, all functions normal, the only lesion a little lump of the size of a small marble. We prepared to remove this, believing that this would end the trouble, as time enough had elapsed and no other sign of malignant growth could be detected But here the fool friend intervened. This friend got hold of a bit of information and hurried over to communicate it.

"Oh, Jane, do you know what the Doctor is treating you for?" "Why, no, I never asked and he never told me." "Well, I know. It is cancer!" The woman became delirious and died two days later, without regaining her reason. What killed her? She died of fear.

Fear reaches out to hold back the hand of the surgeon while life ebbs. It is one of the priceless qualities of the morphine-hyoscine anesthetic that it dissipates fear and the patient ceases to object to any procedures seen by the surgeon to be necessary.

Yet, fear is a potent ally when we seek to turn our patient out of the broad way that leads to death and direct his steps into the straight and narrow path that leads to long life, healthy usefulness and happiness. When good sense holds sway, fear seconds our admonitions effectively.

So, in this queer world of ours, we find the good and the bad so inextricably commingled that nothing is essentially either good or bad, but may be either or both at times, under varying conditions and circumstances. Each and every one of us is a mixture of good and evil, a combination with a large substratum of the earthy and a little spark of the divine.

Leading Articles

The Treatment of Bronchial Asthma

By Otto Lerch, M. D., Ph. D.
Professor of Diagnosis and Treatment, Tulane Post-Graduate Department, University of Louisiana

EDITORIAL COMMENT.—It is with much satisfaction that we present to our readers Doctor Lerch's scholarly and practical study of bronchial asthma. The treatment of this difficult malady, as suggested by the author, is so emphatically a question of positive and definite therapeutics as to promise well for the comfort of the patients.

BRONCHIAL asthma consists of sudden attacks of shortness of breath, caused by the narrowing of the smaller bronchi, which interferes with the free passage of air. The narrowing is brought on by spasms, by the swelling of the mucous membrane, and by the secretion of a tough and sticky mucus. These attacks may last hours or days, and usually are more severe at night. They may be followed by intervals of perfect health, although as a rule bronchitis soon is established and continues.

The shortness of breath, the sticky mucus —the latter frequently containing Curshman's spirals, Charcot-Leyden crystals, and a large number of eosinophiles, with a relatively small number of leukocytes—wheezing heard all over the chest, a distended thorax and forced expirations, these are the characteristic symptoms of an attack.

In making the diagnosis, cardiac, nephritic, and thymic asthma have to be thought of. The dyspnea in heart disease is due to stasis in the pulmonary capillaries and veins, to swelling of the mucous membranes of the bronchi, and to the inability of the weakened heart to supply the respiratory center with a sufficient quantity of aerated blood. In nephritis, heart and vessels usually are affected—degenerated heart-muscle, high blood pressure, changes in arteries. Thymic asthma is caused by the pressure of the hypertrophied gland upon the trachea and large vessels. (See Figs. 1, 2, 3,).

Aside from this, I have always found in asthmatics an abnormally enlarged thymus during the attack. The enlargement is caused by overfilling of the gland with blood (Waldeyer's retrosternal thymic fat body).

A nervous predisposition, a diseased or easily affected mucous membrane, and a direct cause, an irratating agent, are necessary to produce bronchial asthma.

The inherited predisposition is always that of enteroptosis, and is characterized by hysteric and neurasthenic symptoms; irritability and lability of temper, pains, varying in severity and location, headaches, usually migraine, or clavus hystericus, paresthesias, and anesthesias, pain on pressure over

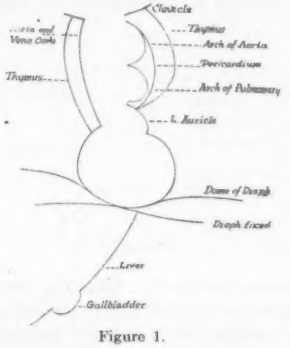


Figure 1.

certain points: above the nipple, over the ovaries, appendix, gall-bladder, end of the coccyx, or depression, easy fatigue, backache, and constipation, with more or less severe disturbances of organic functions. The frequently distended emphysematous lungs of enteroptotics, due to the downward displacement of the diaphragm, increase the difficulty of expiration.

The classification of the disease into bronchial asthma, nasal asthma, uterine asthma, and stomach asthma shows that the mucous membranes are involved in every case, which frequently can be confirmed by examination.

The direct cause—that is, the irritating agent—varies and often is unknown. The

pollen of certain plants (ragweed and golden-rod), dust or any other irritating substance may bring on an attack if the other factors, the enteroptosis and the vulnerable or diseased mucous membrane are present.

Treatment Based upon Etiology

The etiology indicates the treatment. The nervous predisposition has to be treated, catarrhs must be cured, and the mucous

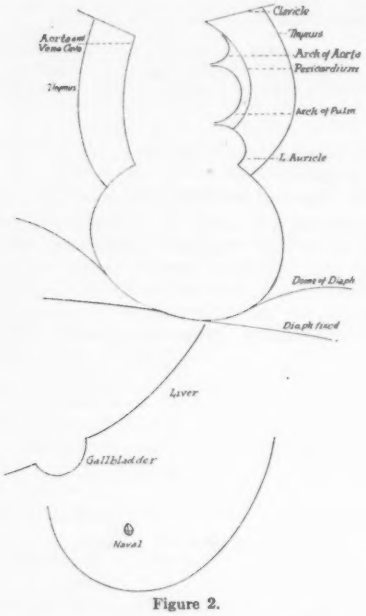


Figure 2.

membranes hardened. Also, the body must be immunized against the irritating agent, if that is possible, or, if not, the patient has to be removed from the cause, that is, sent to a place where the particular irritating agent is not present.

The treatment of the nervous predisposition consists in the treatment of the enteroptosis. Not all enteroptotics are asthmatics. The patients usually have relaxed abdominal walls and pendulous abdomen, although in some instances the abdominal recti may be found hard like cords, but then they are more or less widely separated. These conditions favor drop and excessive mobility of the abdominal organs, of liver, stomach, spleen, kidneys, intestines, uterus, and of lungs, and often cause cardioptosis, owing to the downward displacement of the liver and stomach. The heart, suspended by the large blood-vessels, rests upon the diaphragm and is fixed by its domes, formed on the left by the stomach and on the right by the liver; but, with the drop of these organs the domes flatten and the heart loses its support and becomes movable —more to the right or left, according as the liver or the stomach have dropped, or to both sides, if both organs are down. (See Figs. 4, 5.)

This condition adds to the suffering of the asthmatic.

Management of the Enteroptosis

The abdominal muscles exert a powerful upward and backward pressure in the normal subject. They keep the organs in place, increase intraabdominal pressure and exert counterpressure against the descent of the diaphragm. The abdominal organs receive a massage during respiration; pressed from above by the diaphragm and from below by the abdominal muscles, venous blood is driven out, arterial blood follows, heart action is aided and the circulation throughout the body improved. In enteroptotics, with their pendulous relaxed abdomen, this important aid to the circulation is absent and is the cause of congestions, not alone in the abdominal organs, but in any part of the body.

Thus, breathing-exercises, properly taught, must be practiced every day, to strengthen the abdominal muscles and improve the

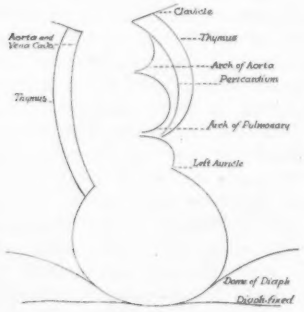


Figure 3.

circulation. To this, other suitable exercises may be added for the same purpose—such as bending forward, going into the knee position, lying on the floor and raising the legs and others—care being taken that the exercises are directed toward increased inspiration and expiration. A suitable bandage must be worn until muscular tissue can be made; that is, a bandage which exerts upward and back-

ward pressure and restores the pendulous abdomen to the normal; a substitute for the muscles. The bandages on the market mostly are defective, because they are curved and do not exert pressure.

A bandage* designed by me consists of a shield made of cloth, with three whalebones, set straight, to give it stability. This shield is placed above the pubic mons and buckled with three straps to a second shield located across the spine. By tightening the lower

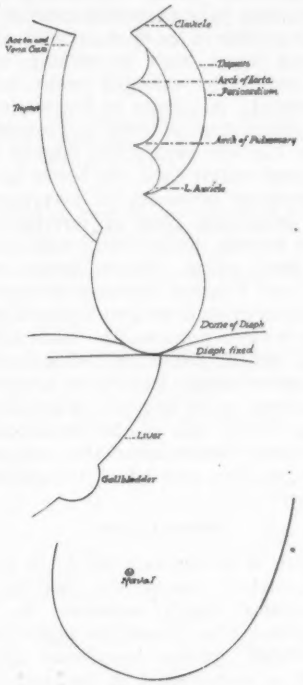


Figure 4.

strap, the second less so, and wearing the uppermost just tight enough to support, the pendulous abdomen is restored to the normal and the desired pressure upward and backward is secured.

The Disturbed Circulation

Sufficient rest in the recumbent posture is of equal importance to ease the circulation and to secure a better distribution of the blood.

Blood and lymph have to be kept in the upper portion of the body by heart-force and muscular tone. Heart and muscles tire when taxed too long, the blood follows the law of gravity—it drops—the abdominal organs become congested and the chest-organs do not receive a sufficient amount of blood; the general circulation is disturbed, veins are full and arteries empty, and this is especially marked in enteroptotics, owing to their relaxed abdominal muscles.

All enteroptotics have too much blood in the abdomen and not enough in the upper portion of the body. Rest in the recumbent posture relieves this condition and restores equilibrium between the arterial and the venous circulation. In many cases, it is advisable to place supports (bricks) under the feet of the bed at the footend. Continued rest in bed, though, is costly and disagreeable to the patient. It requires the skilled attendance of nurse and masseur. In all except in the most advanced cases, intermittent rest is sufficient, one or two hours after the noonday meal and an early bedtime. That is to say, the patient must not be kept too long in the upright position, sitting or standing. The rest after the noonday meal is especially of importance, as at that time

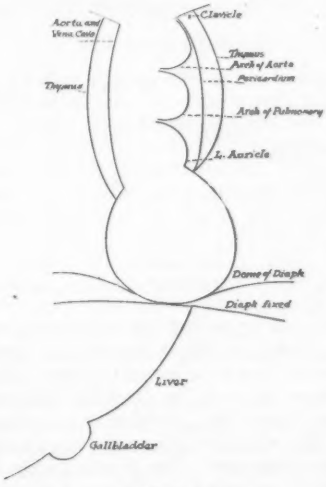


Figure 5.

the stomach demands blood to produce gastric juice for digestion.

Fresh air, day and night, is more necessary in this disease than in any other. The patients should be treated like consumptives. Enteroptosis constitutes a predisposition for consumption.

*The bandage is made by Albert Schroeder, medical and surgical instruments. New Orleans.

Diet has to be prescribed according to climate and season, the state of nutrition of the patient, his financial condition, his assimilating power, and the affections of the gastrointestinal tract, which rarely are absent. Drugs have to be used as indicated: asafetida and valerian, to quiet and to relieve cramps; the bromides and other hypnotics to produce sleep; tonics, to increase appetite and to tone the system, or whatever seems called for.

Remedial Measures for the Mucous Membranes

The mucous membranes have to be freed from mucus and kept clean. They have to

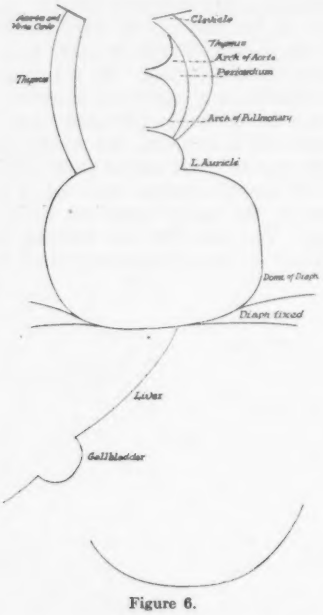


Figure 6.

be protected by antiseptics and mineral oils, and a sufficient blood supply—an active hyperemia—has to be secured to cure. Nose and throat have to be carefully examined, and any defect that prevents a free passage of air (like adenoids, polypi, deflected bones) must be corrected. The mouth cavity has to be kept in perfect condition. Catarrh of nose and throat must be treated according to the rules. These include: warm alkaline washes and gargles, to remove the excessive mucus; antiseptic lotions and sprays, to prevent bacterial growth; applications of medicated vaseline, to protect the surface against the irritating agent; proper measures to bring the blood to the diseased membranes; rest in the recumbent posture; massage applied locally, and irritants, to produce hyperemia.

Fresh air and breathing-exercises are the best means to prevent bronchitis, and are necessary to cure. Acute bronchitis, with fever, demands rest in bed, and aconitine, to relieve congestion and lower temperature. The hot-air or steam bath, a prolonged hot mustard foot-bath or else free perspiration produced by hot drinks in bed frequently cut short a bronchitis.

If the disease has become chronic—and asthmatics are rarely free from it—the patients have to be advised to spend as much time as possible in the open air, while all predisposing causes, such as smoking, alcohol abuse and badly ventilated rooms, have to be removed. A sojourn at the seashore or in the mountains not alone will temporarily relieve, but will harden the mucous membranes and enable them the better to resist the irritating influences of everyday life. Steam inhalation, plain or carrying acetic acid, or benzoin, soothe the bronchi and free them from mucus. Warm drinks relieve cough, and Priesnitz bandages (cross-packs) and counterirritants produce hyperemia. To liquefy the sticky mucus, the warm alkaline mineral waters, potassium iodide in warm milk, apomorphine, lobeline or emetine in minute doses are to be given till the secretion becomes loose, and if the bronchitis has passed into bronchorrhea the balsams of tolu or of Peru and oil of turpentine are indicated.

Gastric Catarrh

Catarrh of the stomach has to be treated with a carefully selected diet; nothing hard and nothing highly seasoned. In fact, nothing should be allowed that might irritate an inflamed mucous membrane. If the gastritis is accompanied by hyperacidity, a

Figure 7.

glass of warm alkaline mineral water one hour before each meal should be sipped, and, if not sufficient, an alkali (according to the state of the bowels; magnesia, soda or bismuth) should be given one hour after eating

EXPLANATION OF DRAWINGS ACCOMPANYING THE ARTICLE BY DR. OTTO LERCH

NOTE.—Through an error, the insertion of these captions, in their proper places, was omitted.

Fig. 1. M. P.; normal thymus in a girl six years of age. Chronic gastroenteritis. August 3, 1916.

Fig. 2. Mr. M. Dilated thymus during acute attack of asthma, Jan. 2. 1915. Heart dilated.
Patient is 22 years of age; 5 feet 7 inches tall; weighs 139 pounds; blood pressure, 130. Has suffered from nasal catarrh since he was 10 years old; and from severe asthmatic attacks for the last 6 years, experiencing several paroxysms weekly. The first attack followed after an acute bronchitis.

Fig. 3. Mr. M., same patient. Normal thymus after having been free of asthma for several months.

Fig. 4. Mr. E. Dilated thymus and drop heart during attack, Feb. 26, 1916.
Patient is 53 years of age; 5 feet 8 inches; weighs 130 pounds. Blood pressure, 140; loud systolic blow. Has suffered from chronic gastritis and asthma since he was 40 years old.

Fig. 5. Mr. E., same patient, Jan. 29, 1917. Normal thymus after having been free of asthma for many months. The change in the shape of the heart and the flattened domes of the diaphragm will be noticed.

Fig. 6. Mr. W. M. Dilatation of heart, Feb. 23, 1917.
Patient is 58 years of age; 5 feet 1½ inches tall; weighs 176 pounds. Blood pressure, systolic, 220; diastolic, 160; pulse pressure, 60. Arteries sclerosed and tortuous. The typical box shape of the dilated heart. Had a light, apoplectic stroke two years ago; complains of great weakness.

Fig. 7. Heart of Mr. W. M., same patient, Feb. 27, 1917, after purgation with calomel and soda.

The charts are obtained with my method of "drop" percussion.

1) Ueber eine neue Perkussionsmethode. *Deut. Arch. f. Klin. Med.*, December, 1912.

2) My method of percussion; *Internat. Clin.*, vol. 4, series 25.

3) Comparison of "drop" percussion with the methods now in use. *Arch. of Diagn.*, January, 1916.

combined with atropine or belladonna. The warm mineral water when given one hour before eating washes the stomach and frees it from mucus; during its passage through the intestines, part of it is absorbed and increases the alkalinity of the blood. The alkali given one hour after eating neutralizes any excess of acid and the atropine checks excessive secretion. If the gastritis is of the anacid type, a muriatic water is indicated, and hydrochloric acid, after eating, given, to stimulate acid secretion. Drugs may be added to stimulate and to assist digestion, such as berberine, papayotin, quassin, juglandin.

Intestinal Catarrh

Catarrh of the intestines has to be treated on similar lines, with hot applications, a suitable diet, bland and nonirritating, to meet diarrhea or constipation, hot mineral waters, and hot enemas with tannin or Karlsbad water, to check diarrheas. Atropine or belladonna, to slow peristalsis, to decrease secretion, and to stop cramps. The sulphocarbolates or other antiseptics, to check excessive fermentation, and laxatives and enemas, to empty clogged bowels and free them from mucus.

Great attention has to be paid to the state of the bowels in every case of asthma, and an occasional purgative of calomel and soda, followed by a saline laxative, is always indicated, not alone for the purpose of cleaning out, but especially on account of the effect it has upon the circulation—it empties the liver and takes a large amount of water from the veins and thereby relieves the heart. Dilated hearts return to their normal size and normal hearts act with greater vigor after such a treatment. (Figs. 6, 7.)

Constipation has to be relieved in every case, if possible, by physiologic methods.

Strong enervation, "habit"—bulk of diet—vegetables and fruits—and softness of the stools—olive-oil, to keep the bowels open. Either one may be increased by drugs. Strychnine in atonic and atropine or belladonna in spastic constipation—Agar-Agar when it is desirable to increase the bulk, and saline laxatives or Russian oil, to soften or liquefy the stools. Drugs may be used that influence several functions of the bowels when indicated, increasing secretions and peristalsis, and so on.

Uterine and vaginal catarrhs have to be treated on the same plan, that is, to free the mucous membranes from mucus, check bacterial growth, and produce hyperemia.

If the irritating agent happens to be the pollen of a known plant, immunization may be tried.

Hay-fever, Asthma and Pollen Therapy

Hay-fever and asthma associated has been treated on a large scale with antitoxin serum prepared by injecting horses with pollen-toxin. The reports differ as to the efficiency of the treatment—some have obtained very favorable results, others have failed altogether. This may be partly due to the selection of cases. It seems to act best in the milder form of the disease—and has some prophylactic properties. Formerly it was only locally used, by allowing a drop or two to flow into the conjunctival sac and nose, or it was used as a powder in the same locations. Some patients become intolerant to the treatment after the applications have been repeated for some length of time.

Since 1914, English and American observers have reported favorable results from hypodermic injections of small doses of pollen-extract. They have used: timothy pollen-extract for the treatment of the spring variety, ragweed pollen-extract for the treatment of the autumn type of the fever, and the two extracts combined for the treatment of cases that set in early and last long.

To Increase Resistance

A number of drugs are used to increase the resistance of the organism and to influence the attack. Strychnine administered in increasing doses has given good results in some cases. Arsenic is useful in all. It may be given by mouth or preferably by hypodermic injections. It dilates the capillaries, soothes the nervous system, acts as a stimulant upon the blood-making organs, and possesses germicidal properties; it makes pure and rich blood and strengthens the defensive powers of the organism. The organic compounds of arsenic are less toxic than the anorganic ones.

I have given pituitary extract in large doses (from 5 to 15 grains) three and four times daily, with marked benefit, and never have seen any bad effect. Blood pressure is but little influenced—a slight rise when the pressure is low, none or little when it is normal or high.

Atropine acts in some cases by relaxing the spasms of the bronchi and diminishing secretion. In most, it fails.

Hyoscine and hyoscyamine act like atropine. The inhalation of various preparations made up of saltpeter and various plants (asthma-

powders and asthma cigarettes) is supposed to act by irritating the mucous membranes. The inhalation of oxygen should be tried in severe attacks.

Morphine and heroin relieve, but are dangerous to use, because of the habit which is readily established.

A spray of the throat with a solution of adrenalin, 1 : 1000, has been recommended, and sometimes gives good results.

If the treatment of asthma on these lines ails, which it rarely does, a place or climate has to be found in which the irritating agent is absent and in which the patient can live comfortably. Most asthmatics do better in high altitudes, although some are free from attacks only at the sea-shore. Occasionally an asthmatic will be cured by moving from the city into the country, or the reverse, or, even moving from house to house or room to room.

It gives me pleasure to thank Dr. A. Fossier for his assistance in the management of the patients.

The Therapy of Malaria

By A. L. Nourse, M. D., Sawyerville, Alabama

HE who would successfully treat malaria must get beyond the academic dictum that it is caused by the various forms of Laveran's protozoa and that quinine will kill them; this, without losing sight of these fundamental facts. Quinine is good and resort to the microscope should be had for confirmation of diagnosis as much as circumstances permit, remembering that in a malarial country the tendency is, to blame typical or atypical forms of the disease to almost anything.

Modern treatment-efficiency does not permit of a routine attack upon the invading organisms, but, as in other troubles, treat the patient and the symptoms, with the satisfaction of knowing, with diagnosis established, that the causative factor against which to use ultimate therapeutic effort is an invading army. An army as real and demonstrable as one composed of infantry, artillery, and cavalry; one to annihilate without undue injury or chance of injury to the human battlefield.

In malaria, realizing the concentration of vital forces upon attempted elimination of the protozoa and consequent toxins, together with products of special functions raised above the physiological, the importance of cleaning up and keeping clean, inside and out, should be recognized, and the inner bath by means of salines and intestinal antiseptics should be judiciously employed throughout the treatment, this following the initial cholagog and brisk cathartic. The brilliant results from the addition of this line of treatment to any confined to antiperiodics and the older gross catharsis are probably better explained above than by the suggestion that protozoan reproduction may also take place in the alvine tract.

The Initial Treatment of Malaria

Calomel, bilein, and podophyllin, in divided doses, best start the usual treatment, unless urgent symptomatic indications, such as chill or other manifestations of the algid stage, are present.

Seeing the patient at the time of a chill, the writer proceeds to equalize the circulation and to stimulate. Glonoin, 1-250 to 1-100 grain under the tongue or hypodermically and repeated in fifteen minutes to effect will usually suffice to break the chill. It is to be remembered though, that pushing glonoin too hard will result in a nitroglycerin-headache; hence, where prompt relief is not thus secured, atropine may be used to follow the glonoin. In severe chills, especially those of the pernicious form of the disease (usually estivoautumnal), inhalation of amyl nitrite (broken perl) will be found of the utmost value for securing reaction. (Every practician should have amyl nitrite, the emergency stimulant, at hand.) With these three remedies thus used, the severest type of chill or collapsed state, representing failure of nature to react to the point of the chill manifestation, should be well cared for under ordinary conditions.

However, the simple chill may be replaced by serious manifestations, even convulsions and the socalled congestive or "yellow chill." Capsicin and hot drinks internally, with heat externally applied, are excellent adjuvants. *Let attention be given to the algid stage and the importance of at all times keeping an active and equalised cir-*

culation, and the danger of hemoglobinuria, hepatic and spleenic engorgement, is materially lessened.

With the algid state controlled or in serious condition of the patient even before, give a full dose of pilocarpine, to establish diaphoresis, and the fever period will be markedly shortened. The use of pilocarpine may be made nearly a matter of routine. The fever itself is combatted as in other diseases, aconitine being the foremost remedy, gelseminin and veratrine following as indicated. By the writer, quinine is not used for febrifuge effect, when selected as the antiperiodic, it is depended upon for this alone.

Quinine-Therapy

Quinine being selected as the protozoicide, the next thing is, to decide upon which salt of it to use; *always after secretions have been established.* The sulphate, the usual selection, is more liable to cause ringing in the ears and other symptoms of cinchonism than is any other form of the drug, especially so in a patient having an idiosyncrasy against it. The selection of the hydrobromide will lessen the toxic liability of quinine in massive dosage; but, when this seems advisable, the hypodermic administration is the better way for getting quick saturation, if that method is feasible. This latter affords a choice among a number of preparations, the dihydrochloride and bisulphate being highly water-soluble, while the quinine and urea hydrochloride is finding favor with many.

The cinchona alkaloids in large dosage are destructive to protoplasm and it is probably this property that renders them efficacious in killing the malaria-protozoa. Although selecting the invading organism as the field for our action, the quinine in large dosage can not be said to be free from destructive effect upon protoplasm essential to the more delicate physiological functions; hence, conservatism in the use of heavy dosage may well be considered. Brilliant results may be obtained from the smaller dose of the selected quinine salt frequently repeated, always provided that the cleanup and keep-clean program is followed out with keeping up cholagog action by means of leptandra, euonymus or other vegetable remedy after the initial calomel course. The massive dose of quinine may usually be avoided when the other details of treatment are carefully carried out. It is essential to maintain quinine effect, even by having the patient awakened at night for administration.

Capsicin (oleoresin of capsicum) and myrrh constitute an excellent addition to any antiperiodic therapy. "Number 6" (tincture of capsicum and myrrh) is a frightfully hot and disagreeable medicine to take; however, those who, in their time, prescribed it in connection with their antiperiodic treatment undoubtedly got good results (that is, when the patient could be persuaded to take it). The habitual employment of myrrh (either tincture or powder) will convince anyone of its value, and there is now no difficulty in administering capsicum, in the form of capsicin (oleoresin), which acts as a stimulant, especially to the gastrointestinal glands of secretion. [Cf. this journal, 1916, p. 863.—Ed.]

Other Therapeutic Measures

Hydrastis is another drug which gave good results despite its bitterness, and the desired effect is now obtained from one of its active principles, berberine. Berberine exerts a special action upon the spleen. Blood-cell destruction in malaria renders every known aid to the spleen imperative in the treatment of the disease. Berberine is of acknowledged value here.

In the malarias, the red blood-corpuscles are attacked and wrecked in large numbers; therefore, we think of reconstructives. This means iron, and nature is so greedy for it here that it will utilize this element in any form you may select; but, the addition of nuclein should not be overlooked.

While the cinchona-bark derivatives have established a deserved reputation for the relief of malaria, it must be kept in mind that these by no means are the only agents capable of curing the disease. Stopping with full satisfaction at quinine, is like the satisfied pause of the profession at the mercury-bichloride point in surgical antiseptics; we can go further. The concentrate from corn-silk known as maizinin has great value. Also, the combination of eupatorium perfoliatum, tincture of myrrh, berberine sulphate, and salicin (with the cleanup and keeping clean indications met) has in the writer's hands equaled quinine.

Hemoglobinuria

There is much adverse report regarding the prescribing of quinine in large doses in malarial hemoglobinuria, perhaps without reason; at any event, the writer is afraid of it and prefers other antiperiodics, such as

the combination last named. Hemoglobinuria is a serious complication, signifying a profound toxemia and localized deep congestion. Treatment should be the same as that of like hemorrhage from other causes, although it is more difficult to control, owing to the destructive action upon the anatomic elements of the blood itself, resultant upon the activity of the plasmodial parasites.

Elimination through channels other than the kidneys must be pushed and supportive treatment instituted; vigorously specific medication directed against the protozoa being temporarily subordinated. Oil of erigeron, 6 or 7 drops in capsules (soaked for a minute or two in warm water), together with pilocarpine sweat and vigorous stimulation with strychnine have, in the writer's hands, been effective, although, fortunately, few of this type of cases have recently come into his hands. Stypticin should here be thought of. This is a narcotic product. Narcotine has proven itself, according to East Indian reports, to have a beneficial effect in malarial types refusing to yield to quinine. It is stimulant and, as its name indicates, active in controlling hemorrhage.

The malarial patient is, through lessened resistance, rendered more susceptible to pneumonia, typhoid fever, and other complaints, hence, the watch for these complications should be constant. In the continued intermittent fevers, however, the treatment, except the antiperiodic feature, is practically the same as in typhoid fever. In such cases, especially with an atypical temperature curve, resort to the microscope must be had; blood examination being made for both diseases, but always remembering that quinine will probably be productive of a negative report with regard to the malarial organisms.

Malaria Can Be Eradicated

Any malarial patient should be kept under treatment for some time after a cure seems to be accomplished, preferably until negative reports are had on the blood. But, usually the patient is either negligent or else convinced that the doctor is adding more millions to his fortune by insisting upon needless treatment and, so, quits before being discharged as cured. Were all patients properly treated for a sufficient time, presumably the disease eventually would die out. The female mosquito then would find no infected person to bite, a link in the biologic chain would be broken, and screens and coal-oil would become unnecessary after the death of one generation of the anopheles.

Let us all at least give full study to cinchona-bark and its derivatives, realizing that the unthinking routine prescribing of sulphate of quinine does not at all exhaust quinine-therapy, since every alkaloid is affected in its action by the acid-radicle of its salt. Also let it be borne in mind that malarial infection means blood-cell destruction and nature's cry for materials of repair, both during the acute stage and in convalescence.

In convalescence quinine arsenate comes in well. Arsenic has antimalarial action as well as a favorable influence upon blood-cell reconstruction; also a change in antimalarial drugs is advisable, because of the tendency of a strain of the protozoa to develop immunity against a continuously ingested drug.

In a malarial country, chances are that before calling upon or summoning a physician the patient has exhausted calomel and quinine possibilities in the cruder form of exhibition, he having either taken calomel and followed it with a "chill tonic" containing quinine or taken the sulphate to verge or to the point of cinchonism. Questioning or volunteered information will bring out these points, and it is then up to the physician to show that treatment does not begin and end with calomel and quinine. If no further resource were available, the patient might as well stay away from the doctor—some patients do stay away from some doctors, because of the latter's limitations in these cases.

Allusion has been made to the administration of medicines in capsules, first briefly soaking them in water. In malaria, as in other diseases, difficulty in giving medicine, even small doses of liquids, can often be overcome by enclosing the drug in capsules and moistening them. Nicety of judgment must be used not to soak them too long, but a little practice will enable one to get them just right. This enables objecting patients to swallow them with a gulp of water almost without knowing of their going down, even the largest. Incidentally, the passage of undissolved tablets and capsules, through the bowels (as has happened in cases of scant secretions) is of no benefit to the patient and decidedly awkward for the doctor, exposing him to the charge of negligence.

Intravenous Injections of Quinine*

By P. Carnot, M. D., and A. De Kerdrel, M. D.
Both in the medical service of the French Army; Marseilles Sector

EDITORIAL COMMENT.—"Paris Médical" is the only French medical journal that has reached us for many months; but it makes up for the paucity of other publications by the richness and variety of its contributions. Edited by some of the foremost French clinicians, "Paris Médical" mirrors the medical thought and acquirements of the day, in practical, scientific and also rich in feuilleton articles. The following contribution by Drs. Carnot and de Kerdrel was written out of the fulness of personal experience and observation. We believe that it will prove of interest.

MALARIA, as we have observed it in a large number of invalids in the medical sector of Marseille who had returned from Macedonia, is unfavorably distinguished, during the first months of its evolution, by its virulence, by the multiplicity, gravity, and irregularity of the symptoms to which it gives rise, and even more so by the rapid loss of vitality occasioned by it, although the mortality is relatively unimportant. Furthermore, the disease is very resistant to quinine medication.

Being due principally to the tertian parasite and that of the tropical malignant tertian type (so far we have observed only one case of the quartan), this disease may be compared, with respect to its virulence, to the severe and quinine-resistant malaria that is characteristic of certain tropical colonies. This is also the conclusion of recent observations by Armand-Delille, Paisseau, and Lemaire (*Soc. Méd. Hôp.*, Oct., 1916) at Saloniki. While many invalids improve rapidly upon returning to France and after ordinary quinine-treatment, many others remain profoundly infected, even after large, long-continued doses of quinine administered internally or by hypodermic or intramuscular injection.

We also have resorted to the most active and energetic therapeutic methods, and have given or caused to be given a large number of intravenous injections of quinine according to the Baccelli method.

In the first months of the disease (the stages of which we have observed almost solely up to the present time), this method has given us results that are superior to those obtained from other modes of administration, even though it is only exceptionally that they lead to a complete elimination of the organism from the hematozoa.

We have obtained magnificent results in early pernicious attacks. In primary infection, whether the recurrences are continuous or not, our successes have been numerous and manifest, but it was found necessary to force the doses and to repeat the intravenous injections from time to time in series. On the other hand, our results have been less evident (similarly as those after internal and interstitial administration) in the afebrile attacks and in the early visceral manifestations of malaria.

We believe that it is of interest to publish, without prejudice, the results which we secured with the most active form of quinine-medication at a time when circumstances rendered necessary the struggle against the many proteiform manifestations of such a severe type of malaria. For, since quinine still constitutes the only efficacious remedy against paludism, its very failure renders necessary the employment of the most vigorous methods of administration.

Technic of the Intravenous Injections of Quinine

Since the technic of intravenous injections has become familiar in a general way, particularly through the introduction of arsenobenzol, we shall here refer only to certain particular features to be noted in the intravenous administration of quinine.

We have made almost exclusive use of the solution of quinine-urethane, the advantages of which are well known from the work of Gaglio. This solution, which heretofore has been administered almost solely interstitially, is less painful, less caustic, and more rapidly absorbed and assimilated than are other solutions of quinine, especially those obtained by the addition of acids or of antipyrin.

We have at our disposal, in the military medical supplies, ampules of sterile solution of quinine-urethane, each of which contains

Basic hydrochloride of quinine	Gm. 0.4
Urethane	Gm. 0.2
Distilled Water	mil 1.0

Usually the solution is yellow; but occasionally it turns green, apparently through the heat of the sterilization process; but no great importance attaches to this change of color. On the other hand, ampules are invariably to be rejected if their contents are not absolutely clear.

This solution, which is quite concentrated (40 percent) may be injected directly, just

*Translated from *Paris Medical*, January 6, 1917.

as it is used in intramuscular administration, and according to the technic worked out by Ravaut for the intravenous injection of concentrated solutions of arsenobenzol. However, we prefer to employ a solution of greater dilution for our intravenous treatment.

Most commonly we mix the contents of each ampule with 20 mils (Cc.) of physiological salt solution, which reduces the strength of the quinine from 40 to 2 per 100. An advantage in employing this diluted and only slightly irritating solution is, that it must be introduced very slowly; also, if owing to a not infrequent mistake in technic a few drops should enter under the skin, there will not occur that local irritation that so often is caused by the more concentrated solution.

In severe cases, principally in the algid types or in the bilious forms associated with anuria, we have at times found it advisable to dilute the quinine solution still further, by adding considerable of the physiological salt solution. In this event, we mix the contents of one or two ampules of the quinine-urethane in 1-2 liter (500 mils) of warm artificial serum, and inject this into the vein in the usual manner. The strength of the solution then is only from 1.6 to 3.2 in 1000. This method has the advantage, owing to the intravenous introduction of artificial serum, of stimulating the patient and of supplying water to his tissues; it increases the tension, and arouses diuresis while avoiding the deleterious action of the quinine upon the kidneys; at the same time it exerts a sterilizing effect upon the parasites in the blood.

The intravenous administration of quinine must be done slowly. We inject, for instance, 20 mils of physiological salt solution, holding 0.40 Grams of quinine-urethane, in the space of about five minutes. We recommend watching closely the point of injection and to stop instantly if through faulty technic the slightest local edema makes its appearance. In this event, the fluid which has been injected beneath the skin should promptly be expressed through the needle puncture. Observing this precaution, we have never seen any irritation or local sloughing in the bend of the elbow. Nor have we observed any general unpleasant effects aside from some vague malaise and transitory nausea. We have never seen anuria or hemoglobinuria, even after the administration of very large doses. Occasionally, however, in cases of hemorrhagic nephritis, a slight recrudescence of the hematuria has occurred.

Other salts of quinine may be employed for intravenous injections. Thus, the hydrochloride of quinine in physiological salt solution, 1:10 (Baccelli) and also the formiate of quinine have been used by us, at times, with advantage. But, most often we have resorted to the quinine-urethane which has afforded us very satisfactory results. Lastly, in various stations of our sector, intravenous injections of 1 mil of the collobiase of quinine (colloidal or pseudo-colloidal solution of quinine) have been employed with variable success. The amount of quinine in this injection is not more than 2 mg. at each dose. These exceedingly feeble doses do not appear to us to be sufficient for energetic treatment. It has even seemed to us, in two serious cases, that injections of colloidal gold or silver clearly were superior to those of quinine; still our experience is not sufficient to justify any conclusions on this point.

Quinine Intravenously in Various Forms of Early Malaria

Until now we have had an opportunity to observe hardly any but cases of primary malaria of a few weeks' or a few months' duration; hence, we can speak only of these, leaving out of consideration the intermittent forms recurring annually or the late chronic forms.

During the first months of infection, the malarial symptoms do not show any very marked regularity. We have observed principally fever that was continuous or interrupted and more or less irregular; daily fever; continuous attacks of fever lasting for several days and being separated by afebrile periods of about one week; also isolated cases of the weekly or biweekly type, in which the attacks occur on or about the seventh or thirteenth day.

Early pernicious complications superadded to the preceding forms sometimes take place abruptly at the start of malarial infection and then exert their deleterious action upon the nervous system, the liver, the kidneys, and the adrenals. Finally we observed apyretic cases, various visceral disturbances, pernicious anemia, edema, splenomegaly, hematuria, nephritis, etcetera. These are the different forms of incipient malaria against which we have had recourse to intravenous injections of quinine, with variable success.

Severe Onset of Early Malaria

Pernicious symptoms may occur at any time after the inception of virulent malaria and aggravate greatly the condition of the patient; even though it may at first appear

to be simple. These symptoms only rarely inaugurate the disease, but usually appear in persons already infected. They are very serious and require prompt and intensive treatment. These pernicious symptoms are the expression of a massive toxic infection, which may be generalized or may be localized in the nervous system, in the liver or in the kidneys. Ordinarily, several organs are involved at the same time.

It is in the generalized form that we have observed the best results from intravenous quinine medication.

A soldier who had returned from Saloniki showed considerable fever-temperature (40° or 41° C. and even higher—104° to 106° F.). Several hours later, a serious typhoidal condition developed, with stupor, debility, mental confusion; the patient hardly moved, did not reply to questions, was entirely indifferent to his surroundings; urine and feces passed involuntarily, the latter being diarrheic at times; the tongue was dry, fuliginous (sooty), trembling; the quantity of urine was diminished. The general appearance was that of a case of typhoid fever, with prostration.

When such patients are received without any information concerning their history, they may be taken as cases of typhoid fever or typhomalaria. This happened in the case of a patient severely ill whom we saw during a round of visits in the sector. In this case, sero-diagnosis was positive (the patient had been vaccinated against typhoid fever and, consequently, the error arose); an intravenous injection of quinine promptly modified the symptoms which yielded definitely to several additional doses. In such cases, the diagnosis must be prompt and decided, and it is necessary to institute energetic and active treatment.

A generalized malarial infection, especially a localization in the nervous system and the meninges, may give rise to very serious and alarming symptoms. A patient who, before, did not cause any apprehension may strongly complain of severe headache. He becomes loquacious, excited, and delirious, and evinces a tendency to escape or maybe to jump out of the window. In other cases, coma may supervene; the patient does not talk or he may fail to recognize persons or things, the muscles are lax, sensibility is abolished, urine and feces pass involuntarily, the skin is cyanotic in color despite the fever, and covered with sweat; the blood pressure is low, and death seems to be impending. In still other cases, epileptiform crises may be induced by cortical infection, or hemoplegia and aphasia.

Intravenous Treatment in Severe Cases

In such cases, intravenous injections of quinine will make it possible to gain time and to inject promptly a sterilizing dose of the remedy into the vessels and tissues. In these conditions we advise the simultaneous intravenous injection of a strong dose of quinine dissolved in a large amount of physiologic salt solution. In this way, we at one time succeeded in restoring a patient to life through the intravenous injection of 250 mils of physiologic salt solution containing 0.50 Gram of formiate of quinine. In addition, the hypodermic injection of one milligram of adrenalin suspended in 250 mils of physiologic salt solution enabled us to counteract the low blood pressure and the attending asthenia.

In the course of malaria of several months' standing, extreme jaundice supervened; the skin had assumed a saffron tint, the conjunctivae were far more intensely yellow than is seen in most attacks of icterus; vomiting occurred, at first bilious, but soon becoming hemorrhagic. Ecchymoses formed under the skin, the urine was almost completely suppressed for several days—in one instance, the patient passing only one teaspoonful, colored like pure bile in twenty-four hours; in another one, the urine secreted measured only 150 mils. Although the general condition of these patients was not absolutely unfavorable, since pulse and blood pressure were satisfactory, the icterus, hemorrhage, black vomit and anuria made the outlook alarming.

In one of these cases, death could not be prevented; in two others, intravenous injections of quinine in physiologic salt solution saved the lives of the patients against all hope. Here also we advise massive doses of quinine dissolved in half a liter of physiologic salt solution, in order, by acting upon the kidneys, to provoke diuresis and to counteract the inhibitory action of the quinine.

In one old case, the malaria was localized both in the liver and in the kdineys. There were present marked icterus, hemoglobinuria, enlarged spleen, and the general condition was very bad. The symptoms yielded rapidly after six intravenous injections of quinine, which not only did not increase the icterus and hemoglobinuria, but actually caused these symptoms to disappear.

When Quinine by Mouth is Appropriate

In several other cases, there were present simple bilious disorders, with icterus, en-

larged liver, enlarged spleen, irregular fever, and diminished micturition. The symptoms usually yield to ordinary quinine-medication. Indeed, the administration by mouth has the advantage of carrying the remedy directly to the liver. It is necessary to add ipecac in such cases, according to the directions of Inspector Doctor Grall, whose authority in matters concerning malaria is acknowledged. Here, 1.5 Grams of ipecac suspended in a mucilaginous liquid are given for three days before the administration of quinine. However, it seems to us of advantage to supplement this treatment by intravenous injections of quinine, particularly if the portal system is obstructed and intestinal absorption is slow and imperfect. For, while by intestinal absorption the quinine is carried directly to the liver, where a large number of plasmodia are to be killed, the absorption into the circulation carries the drug into all the arteries and particularly to the spleen, the principal localization of the blood-parasite. When using the two methods in conjunction, 1 Gram of quinine may be administered by mouth and 0.40 Gram intravenously.

Practical Conclusions

From these and other clinical experiences, we are justified in drawing the following conclusions:

Intravenous injections of quinine for tropical malaria constitute a simple and practical method of treatment which in no wise is dangerous.

They possess the advantage over intramuscular injections of acting more rapidly and energetically; neither do they have the drawbacks (pain, local complications at the point of injection, sciatica, paralysis, etc.) that so often are seen in patients, affected with tropical malaria, after a series of deep interstitial injections of quinine. Over the administration by mouth, they have the advantage of greater activity and greater rapidity of action. They may be employed even when the clogged-up condition of the intestinal-portal-hepatic passages prevents absorption from the digestive apparatus.

These injections clearly are indicated in all severe forms of malaria, whatsoever their type, whenever it is necessary to strike quickly and strongly.

The most brilliant results are obtained in early pernicious attacks resulting from severe generalized infection, and which vehemently attack the nervous system, the adrenal glands, and the liver or kidneys.

In the continuous or discontinuous forms of severe primary malarial infection that resist other forms of quinine-treatment, the sterilizing action of the drug may be secured by resorting to large doses (0.40 to 0.80 Gram) injected directly into the blood-vessels and repeated in serial courses. The large doses and the direct intravenous injection render possible an effective action in certain forms of the disease which seem to be refractory to ordinary quinine-medication, whether by the internal or interstitial route.

On the other hand, in the apyretic or visceral forms, the intravenous mode of administration does not seem to be of advantage over other modes that are more simple of execution.

It is certain that intravenous injections of quinine enable us to emphasize the action of the quinine and to make it effective in certain cases of severe malaria that are baffling through their rapidity, their virulence or their resistance to ordinary quinine-medication.

Therefore, they increase the therapeutic value of quinine-treatment, without changing its character. But, if the sterilizing action of quinine, augumented in this manner, upon the young forms of the blood-parasites is remarkable, its action upon the resistant forms (particularly upon the growing forms) unfortunately still is inefficacious. Even if given intravenously and in large doses, quinine does not seem to be capable of effecting the complete sterilization of the body infected by the plasmodium of Laveran. For malaria, as for the other protozoal diseases, syphilis and ameboid dysentery, the *therapia sterilisans magna* only rarely becomes a reality; the resistant forms (growing forms, cysts, etc.) escape the action of the medicament; in most cases, the infection is reactivated, and several series of partial sterilization are required to restrain it, without the possibility of effecting a complete sterilization. On the other hand, complete temporary interruption of the treatments is necessary, in our opinion to permit of the development of these resistant forms, the schizonts which as a result then will be susceptible to renewed quinine-medication.

In making use of a period of time that will be favorable to the development of these resistant forms (before a new sterilization capable of affecting the tender forms that result from it), there is involved a principle analogous to that of tyndalization (sterilizing), in which two partial sterilizations are separated by a period that favors the development of our resistant spores present, and, thus, likewise, to their later destruction.

The Physiology of Mind

By Walter Moore Coleman, London, England

EDITORIAL COMMENT.—Doctor Coleman's investigations on the physiology of mind have taken a direction which, to our knowledge, has not been followed hitherto. We are, therefore, the happier to have his results announced first in "Clinical Medicine." Doctor Coleman will, we trust, follow up this article with several others on this attractive subject.

Introductory Experiments

IT WAS long believed that the pulsations of the heart originate in nervous impulses. A few years ago, experiments showed that the heart can beat after all nerve connections are destroyed. The heart of the fetus begins to beat before its nerves are developed. Pulsation of the mammalian heart has been found to begin in the sinoauricular bundle, in the region where the veins enter the heart.

My experiments show that the heart rate within wide limits is controlled (1) through changes in the pressure of the blood entering the heart by the vena cava, owing to contractions of the skeletal muscles, provided the contractions occur at regular rates and the change be gradual from one rate to another; (2) through variations in the pressure of the blood from the lungs, owing to breathing, especially if accompanied by action of the glottis; (3) through rise and fall of the diaphragm.

Since the valves in the veins open in only direction—namely, toward the heart—every contraction of a skeletal muscle squeezes the blood in its veins out toward the heart.

Can rhythmic contractions of muscles control the heart rate?

Experiment 1. Subject's pulse was 68. With watch in hand, he walked at increasing speed for about half a minute; then at a steady regular rate. After 40 seconds, the test with the watch showed 9 steps in 6 seconds (90 steps per minute). The subject at once tested his pulse and found it to be 9 beats in 6 seconds (90 per minute).

Experiment 2. Beginning gradually and then running steadily at a rate shown by watch to be 140 steps per minute, the subject suddenly stopped, when his pulse was taken for 6 seconds and found to be 14 beats, or 140 per minute.

Experiment 3. Subject's pulse was 72. He then walked at the slow, regular rate of 60 steps per minute, the rate being set by a few clicks of a metronome. In half a minute, the pulse was found to be 60. In like manner, it was reduced in one minute to 56, and in two minutes to 48. I will not take up space to give records of dozens of like tests.

Is jarring of feet to earth necessary to aid muscles in controlling heart rate?

Experiment. Each increase in the rate of the exercise being tried by a metronome, C. J., by exercising his arms, in four minutes, brought his pulse from 84 up to 96, then to 120, then to 136.

Can jarring at a regular rate control the pulse, unaided by muscular contraction?

Experiment 1. H. P., lying on his back on the floor, with his fingers in his ears (to cut off the sound of the metronome). At 11:40, the pulse was 88. For two minutes, the metronome ran at 100, to time the blows, while his shoe-heels were struck with the heels of another pair of shoes. At 11:42, his pulse was 100.

Experiment 2. W. M. C.'s pulse was 74. By like treatment, his pulse went to 88. In these two experiments, the pulse dropped down again in a few seconds after the blows ceased.

Can motions of the body regulate the heart rate without cooperation of the will?

Experiment 1. Let the subject stand with one foot upon a slight elevation, while the other foot hangs free. The experimenter, by pushing, swings the subject's free leg at the rate marked by the metronome. At 3:40 p. m., M. K.'s pulse was 84. At 3:43, passive swinging of one leg then seemed to act as the handle of a pump acts in controlling a pump.

Can the method of the exercise determine the form of the pulse?

Experiment. W. M. C. and C. J. ran 150 yards at 140 steps per minute, letting the heels touch the ground with the usual force. We stopped suddenly and felt each other's pulse. In both it was abrupt and hard. Then we ran 150 yards at the same rate, but chiefly on the ball of the foot, scarcely letting our heels touch the ground. In both, the pulse was then found to be elastic, bounding, and free from the sudden jerk.

The Application

Nervous people are given to jerky movements and sudden starts and stops, which only make them more nervous. Regular steady rates of movement soothe and steady the heart. Not even one in sound health

should start suddenly to work or walk or run fast, nor stop suddenly, but should work or run himself into a pace and then run down to slowness again, stopping with the heart at about its usual rate. In that way, panting or any feeling of stress or distress will be avoided and the heart be left steady and strong. A nervous person has so lost rhythm that he does not keep step with himself for long.

Can the pulse be regulated by means of the breathing?

Experiment 1. At 7:45 a. m., W. M. C.'s pulse was 64. Breathing was changed to short compressive breaths. At 7:47, his pulse was 84. It is not necessary to pant with the pulse, but the heart is hurried if the lungs lessen their labor by decreasing suction upon the heart regularly at every second or third or fourth systole, or increasing suction upon it at certain diastoles. This increase or decrease is made abruptly by the sudden narrowing or widening of the glottis.

Experiment 2. C. J.'s pulse was 76. W. M. C.'s pulse was 72. A metronome was set to run at 82 for one minute, then 88, 92, 96 each for one minute. Both subjects attended closely to the sound and motion of the metronome, which means that the glottis varied at each stroke. In four minutes, C. J.'s pulse rose successively to 82, 88, 92, 96, W. M. C.'s rose to 82, 88, 92, but not to 96.

What effect does the glottis produce?

Experiment 1. The pulse was 72. The metronome was started at 100. The subject counted the beats of the metronome emphatically in low tone. In a few seconds, the pulse rose to 100. The subject ceased to count with the voice, but counted mentally, and the pulse fell at once.

Can the heart be controlled through the breathing while the glottis and throat are open?

Experiment. The pulse was 78. The metronome was set at 49. The subject counted the clicks of the metronome in an emphatic whisper. The abdomen was seen to jerk inward at each count. In 12 seconds, the pulse was at 100 with the metronome. During the first 12 strokes, there was a slight pulse halfway between the strong pulses in time with the metronome.

Can "thought" alone control the pulse rate?

Experiment. The pulse was 72. The metronome was set at 60. Its strokes were counted, the numbers being merely thought of but not spoken or whispered or "willed." The pulse remained at 72.

Is the pulse known subconsciously?

Experiment. Ten persons were asked to sit still and raise the finger in time with any rhythmic changes felt. Six of them raised the finger with their pulse.

Can the heart exert a subconscious controlling power?

Experiment. First the pulse was felt. The subject was then asked to walk at an easy steady rate. Fifty percent of the subjects stepped at the pulse rate.

The same experiment yielding about the same result was tried with chewing; also with accented syllables in reading and talking.

The Heart and Subconsciousness

The word "subconscious" means, out of the usual fields of attention and to be perceived only under the most favorable conditions.

The term subconsciousness is used in the sense of indicating the inattentive total of consciousness. It is based on regular changes happening in the body; these not attracting the attention as do irregular changes. Many persons when asked to sit still and indicate the heart beat by moving the finger will indicate every second beat. I am not yet fully satisfied as to the cause of this. The subconscious knowledge of the heart beat seldom reaches attentive consciousness, except when the head is buried in the pillow.

The tending of the heart to harmonize with other regular changes may be shown thus:

Experiment. The subject's pulse was 76. The metronome was set running at 96. The subject counted its ticks aloud. In one minute, the pulse was found to be 72, which is ¾ of 96. The subject counted with the metronome at 104, and his pulse rose to 78, which is 3-4 of 104. The subject counted with metronome at 138, and the pulse dropped to 69, which is 1-2 of 138.

I have shown the power of rhythmic movements in regulating the heart. It will appear, after reading the following experiments and observations, that, contrariwise, the heart has a powerful effect in setting and maintaining rhythms of movements in other organs.

Does the heart aid in the memory of rhythms?

Experiments. L. K.'s pulse was 80. I set the metronome at 92. She counted with it for two minutes, then counted with it, silent, for 2 minutes. Her count was found to have changed to 96. I set the metronome at 86, only six above her usual pulse. She counted with the metronome for two minutes and without it for 2 minutes, and the pulse was, still, precisely at 86. Thus, the rhythm

nearer the heart rate was remembered, while the rate of 12 counts above was lost. If the rate is such that the heart can make it into an overtone, as in the first experiments, the rhythm will then be remembered: For example: the rhythm of 96, in the case of the subject whose usual pulse was 76 and dropped to 72, since 96 is its overtone.

If an animal makes motions at a certain rate, pauses, then resumes the motions at the same rate, is the heart concerned in preserving the rate?

In the zoological garden in Regent's Park (London), a Manchurian crane walked a few steps at 80 per minute, paused, walked again at the same rate; paused for a longer time, then walked once more at the same rate. If we could know whether the bird's heart was beating at 80 per minute, there would be little doubt that the heart beat preserved the 80-per-minute rate.

Observation 1. The Manchurian crane walked at the rate of 80 per minute for four steps. It paused, but I kept walking and counting at 80 per minute. The crane's step came back with my 6th step. It walked at the same rate for three steps, held up one foot, as if listening, then put the foot down exactly 5 steps late, showing that it had a correct inner timekeeper. Time cycle: 1-80 minute. S+S+S+S+S+S+S+0+0+0+0+0+S=14-80 minute.

This timekeeper worked while the crane's attention was on something else. Was this pacemaker the heart? To make sure that my own steps did not influence its pace, I stood still and kept time by means of a muffled metronome set at 80. The results were similar. If I had caught the bird and taken its pulse, the shock would have changed the pulse. A child, dog, house-cat or fowl, if used to being handled, give more reliable results.

Observation 2. An African civet lay on its side and its heart throb against its body-wall was plainly seen. The rate was 54 per minute. It got up and walked, and although it was lame and limped, its steps were exactly 54 per minute. It made a pause equal to 4 steps, resumed at the same rate and exactly in time with the count Time-cycle: 1-54 minute. S+S+S+S+0+0+0+0+S+S+S= 11-54 minute.

Observation 3. A girl 7 years old, eating pudding with a spoon, pushed the spoon into the pudding (clinking the plate) with short interruptions of the movements of the spoon, and also made slight pauses in lifting the spoon to the mouth. These scarcely perceptible breaks in the movements were all at the same rate, which I found to be 105 per minute, since I counted 10 1-2 of them in 6 seconds. Just after the meal, I took her pulse and it was 105 per minute. The rhythm of movement is more marked in young children than in older ones or in grownups.

Observation 4. A game-cock moved its head in slight jerks at a 90 per minute rate. It flew down from its perch and walked. Its steps were at 90.

Observation 5. The cock of the gold-pheasant stepped (S) at 110; it stopped, but continued the rhythm of its steps by pecking (P) grain from the ground, trotted (T) at 220 and called (C) once for a three-time cycle, or steps. Time-cycle: 1-110 minute. S+S+ S+P+P+P+TT+TT+TT+TT+C+0+ 0 + C + 0+0+C+0+0+C=20-110 minute.

The Influence of Poetry and Fine Speech

If you feel the pulse of one who is reading poetry, you will find that each accented syllable is spoken with a heart beat. I find that the same is true of the accented beats in music. I also find that if one reads prose rhythmically the accents coincide with pulse beats.

I have devised a method of reading the pulse of a rhythmical public speaker from the audience, by comparing the accents with my pulse for half a minute. The observer must not be either self-conscious or in a state of lax attention, or his pulse will not be labile enough.

Using this method (which I have verified by feeling the pulse of several speakers just after they finished speaking) I find that about 50 percent of public speakers speak at a regular rhythmic rate. In the houses of parliament, I found recently that Asquith, Lloyd George, Sir John Simon, Lord Courbney are such speakers. T. P. O'Connor, Lord Crewe, and Curzon are not. Arhythmic speakers seem to have little connection between delivery and heartbeat and perhaps pull the heart ahead and hold it back as they speak. I happened to be present when Major Redmond, brother of John Redmond, just returned from the front, and in khaki, made his eloquent and moving appeal for unity among Irishmen and justice from England. He not only spoke a perfect rhythm (a test of eloquence), but the four speakers who followed him kept exactly to the rhythm that he had set.

I have used a similar method in studying the hearts of worshippers at religious services.

I find that the Quakers are the most harmonious internally, their hearts beating at 72 while the spirit is on them, their respiration being exactly 1 to 4 heart beats for children and 1 to 5 for adults. (The last observation was made by C. J., an enthusiastic assistant.)

I found a "high-church" congregation had two rhythms during parts of the service—96 and 72—the latter being 3-4 of the former. In a congregational church, I found the rhythm during the most solemn part of the service to be 72.

Moods and Emotions

I am now prepared to take up the subject proper, namely, moods and emotions, and will try to show the behavior and relation of the pulse and breaths during sleep, calmness, emotion, self-consciousness, and impersonal consciousness, and also how to pass from one state to the other. I shall continue the method of giving simple experiments and observations, which, like those already given, can be easily repeated and verified by the reader. I shall discuss the state of the rhythms during illness. Any observations or experiments made by the reader will be read by me with interest, if they are reported.

Applications: Persons in weak health should be instructed to test their steps by counting for half a minute every five minutes when walking for exercise, until they acquire a sense and habit of rhythm To keep the same rate during the whole walk, will soothe, strengthen, narcotize, with no bad reaction. People with heart disease, high blood pressure or with neurasthenia have all been benefited by this. I found a moral idiot's chief physical defect to be a heart without steadiness, he had little sense of rhythm. I have reduced the blood pressure of an adult, from 160, to 140, in three months; a child's pulse, from 128, to 90, in three weeks; a youth's, from 110, to 80, in one month, with cure of nervousness.

The pulse should be taken more thoroughly than most physicians are doing; each quarter-second should be noted. A pulse of 18, 18, 18, 18=72, is quite different from one that is 19, 17, 19, 17=72.

[*To be continued.*]

Foolish and Wise Charities

By T. D. Crothers, M. D., Hartford, Connecticut

PHYSICIANS have opportunity to realize the stupid blunders that men who have shown the greatest discretion and judgment in the accumulation of money often will make and the imbecility they display in the final disposition of their riches. Take this as an example:

A very rich man in New York did not dare to dispose of his property while alive, fearing he would make blunders and bring a tide of distress and discomfort upon himself, so he left it all to his wife to give away for charitable objects. The poor woman, who had lived a very quiet life, abstemious and careful in all details, was overwhelmed by the burden of disposing of the great wealth. Eventually she turned this duty over to a commission, who, after assigning to themselves handsome salaries, invested the money in the best possible way and utilized only the interest and income, after first deducting their salaries. This institution now has become a veritable trust, and it will thus go on indefinitely. The purpose of the founder has been diverted and the part going to charity is very small and depends upon the whims and caprice of the commissioners.

Recently a very kind-hearted man, who had acquired enormous property and intended to put it to the very best use possible, called to his aid a legal adviser. He had planned to erect an agricultural station for the study of problems pertaining to the farm and home. Plans were made and a location secured. Then there came a halt. Probably, the benefactor was persuaded to double his property, so as to make the endowment regal in magnitude and purpose. There are but few details accessible of what happened; however, ten years afterward, the man died in St. Luke's Hospital (New York)—in comparative poverty.

Almost innumerable examples of faulty giving are found in all parts of the country. Thus, memorial churches in little inland villages, entirely out of proportion to the present and future needs of the community, are common. Erecting, in a small country village, a memorial school-building of impressive architecture, equal to those of large

cities is another example. Hospital buildings, in which the money is expended upon the structure, or, college dormitories and other structures of palatial proportions and impressiveness can be found in almost every large town in the country.

All this reflects on the lack of wisdom in the donors, although not on their good-will and humanitarian instinct.

Laymen and practical business men who have acquired large properties are confronted by the absorbing question of how to place their capital so that it will do the most good, both for the present and the future. To leave it all to their families and to expect them to become superlatively benefited by it is a wrong calculation, as all experience teaches. Any large amount of wealth the handling of which requires wisdom and discretion will prove disastrous to the family in a very large proportion of cases. Thus, a Denver man of more than usual business ability left his large property to his three boys. In ten years, this inheritance had been entirely dissipated. Two of the sons died, while the other was wrecked and evidently soon will die in some pauper institution.

The Hopeful Side

However, there is another side to charities that is very cheering and shows how essential a good physician is as an adviser in matters of this kind. In London, a man dying in a hospital appealed to his physician to tell him what to do with his wealth. A charity hospital for homeless boys was suggested. This idea was carried out, and today, nearly a century after, the St. Barnabas home in London cares for nearly two hundred boys—picked up on the street, homeless—gives them an education, and when they are fifteen years of age places them with good families.

The miser Girard, acting on the suggestion of his physician, founded a college for the education of poor boys; and this school has grown to enormous proportions and, now is one of the great charities of the world.

Johns Hopkins, following the advice of a physician, founded a hospital, a medical college, and a research-center, to develop the science and art of healing; and the benefits and blessings which flow from this source are only faintly realized at present. In New York, two or three laboratories have been established, where discoveries in the same direction have already been made, work that has made the world brighter and diminished disease and increased longevity. These are only the beginnings, but they show how large a field there is for capitalists to raise the standard of life—increase human happiness and diminish the world's misery.

A very wise man has said: "It does not require great ability to accumulate large property, but the wisdom of the man is shown in what disposition he makes of it to help the world on." This is practically true.

While the endowing of hospitals, colleges, homes for the poor constitutes really practical charity and goes far toward lessening the sorrow and misery of life, there is a larger field to be occupied, in which the question of underlying causes of the evils of the present is to be studied. How to develop the things of the present so as to produce the largest possible good for the future, is a greater charity and requires greater wisdom than that which is called for in any commercial circles.

The Doctor's Duty

The alcohol-problem, about which there is so much agitation and exists so much literature and conflicting opinion, is yet practically unknown today. Public opinion is rapidly making it one of the greatest sociological and political topics of the time, and for the next few years it will be the absorbing question, not among laymen alone, but among professional men; and physicians, of all others, must become leaders and instructors in this field. They are most competent, by training and by practice, to understand the laws of cause and effect that culminate in these great problems, that have an intense practical interest to everyone.

A few laboratories in this country, working in conjunction with those of Europe, have brought out the astonishing fact that alcohol is not a stimulant, but a narcotic. Also, that its seductive influence comes from the fact that it is a sleep producer, by covering up pain and fatigue symptoms. This knowledge has literally produced a revolution in medical practice and given a new interest, which is increasing in proportion to the exact study made of the subject.

A general survey of the whole field, from a scientific point of view, makes it clear that the alcoholics and the army of incurables that will appear in the future are being born and bred today—not all in the slums of the city, but also in the homes of the wealthy and cultivated and in all planes of society. They are being bred and grown with the same absolute certainty that typhoid-germs on the watershed eventuate in an epidemic weeks later. These causes are u-known today

and only guessed at, but they exist just the same.

Questions to Be Solved

The time is not distant when the saloon will be abolished and the sale of spirituous beverages disappear. But this is only one of the many exciting causes that produce degeneration and disease. Scientific preventive medicine clearly indicates a new field for discovery of causes, that will suggest new measures for prevention and cure.

With all the literature of the present, there are no exact data to answer these questions: "Why do men drink? What physical and psychical conditions develop the periodic drinker; the constant drinker; the man who after a lifetime of abstinence suddenly drinks to excess and dies; the man who drinks in early life, then suddenly abstains—possibly breaking out again, but the second time never stopping? What is it that makes men drink after losses, disappointments, shocks, diseases?" There are no reliable studies on these questions—so far, it is all a matter of opinion and theory unverified.

A research-foundation has been established at Hartford, Connecticut, to explore this new territory and point out the laws that govern the rise and fall of the drink evil and show how they can be averted and changed.

The temperance-problem must be studied scientifically. The laboratories are doing this now, showing how alcohol affects cells and tissues, and how these defects are transmitted to the next generation. This is a study of effects, and the literature is very rich in this direction, and is becoming more so every year. But, what are the causes back of this? What conditions of living, of culture, of climate, of occupation make it possible for men to seek spirits for their narcotic action?

This work assumes that there is here an unknown field to which every observing physician in the country can contribute facts, which, if grouped and studied, will point out new measures for prevention and cure as startling as any discoveries in physical science.

This is the field where capital can make endowments that will produce the richest blessings to humanity. It appeals to every humanitarian as a new work in the temperance-field higher up and is of personal interest to innumerable persons who would like to know how to escape from the thraldom of the drink-evil. It will be, literally, the consummation and the dénouement of all the grand work to educate the public concerning the evils of alcohol and will find some means of relief for the poor victim, by suggesting the removal of the causes. The object of this work is to take up the physical as well as the psychical study of the alcoholic and the inebriate, and to ascertain what are the propelling causes that are sending men down, by the alcoholic road, to an untimely death.

Electrical Treatment of Hemorrhoids

By C. S. Neiswanger, M. D., Chicago, Illinois

I HAVE not a great deal to add to my former contributions to the subject of treating hemorrhoids, especially to that contained in my book (18th edition); therefore, I may be excused for calling attention to or quoting from my former writings, some of which date back to the year 1895.

I have an abiding faith in surgery for the relief of this troublesome and common ailment, but, if everyone so affected would consent to operation, there would not be enough rectal surgeons to go around. Fortunately, however, the great majority of these cases which the physician is called upon to treat are not thought severe enough to warrant surgical interference, and these are the cases that can be permanently relieved by electrical means. If the case is very bad, I always advise operation, but I now believe that many that I have refused to treat might have been wholly or partly relieved by patient treatment.

The rectum is a great reflex center. If our patient is dying from chloroform narcosis, we stretch the sphincter ani, and he is relieved. If a child has spasms, we do the same, and, lo! it is relaxed. All of which goes to show that we must be cautious in our manipulation at this point if we would avoid causing some reflex disturbance.

Some Etiologic and Physiologic Considerations

While constipation has always been thought to contribute largely to the etiology

of hemorrhoids, there are other and more important causes, the consideration of which will lead us to means of prevention and of cure. Constipation has not so much of a tendency to cause as to aggravate already existing hemorrhoids.

This lesion is evidenced by dilatation of the rectal blood-vessels, a turgescence, which we know is due to some vasomotor disturbance. The walls of the blood-vessels are composed of involuntary muscular fibers and, as such, are supplied by the vasomotor nerves, which control all involuntary or nonstriated muscular fibers.

In the body, we have many balancing and compensating systems that keep it in perfect equilibrium. In the nervous system, we have the vasomotor balanced by branches from the sympathetic, which are inhibitory. Whenever this balance is interfered with, we have vascular troubles. For instance, if we stimulate the vasomotor fibers, the inhibition exerted by the sympathetic is overbalanced and the vessel is dilated; on the other hand, if we produce sedation of the vasomotor, the inhibition exerted by the sympathetic has no balancing power and the lumen of the vessel is lessened.

I am not unmindful of the fact that what I have here written is directly in opposition to the teaching of most physiologists, who assert that stimulation of the vasomotor always produces contraction of the blood-vessels; but these assertions all depend upon the kind of stimulation or whether the stimulation to which they refer might be in fact a sedation.

Landois ("Textbook of Human Physiology," p. 763) aptly explains my position thus: "When the center is irritated electrically, it has been found that single inductive shocks of moderate strength are effective only when two or three shocks occur in a second. The maximal vasoconstrictor effect, which can be recognized from the maximal blood pressure, is observed as a result of from ten to twelve strong, or from twenty to twenty-five moderately strong shocks in one second." Slow induction shocks produce stimulation, but rapid shocks, by producing tetanism, destroy the function of the nerve, by producing sedation. Thus, hemorrhoids may be greatly relieved by induction currents, if they are very rapid.

If the positive pole of a constant current is applied to a vasomotor nerve, sedation is the result, with consequent lessening of the lumen of the vessel by placing the muscular walls entirely under the influence of the sympathetic fibers, which act by inhibition. If the negative is applied, we have the reverse effect.

Different Effect Upon the Vasomotor and Sympathetic Fibers

The question here arises, Why does not the current affect equally the vasomotor and the sympathetic fibers? For the reason, that the vasomotor fibers are all medullated from their origin to the sympathetic cord and consequently, are excellent conductors; the sympathetic is characterized by the presence of nonmedullated gray fibers which are very poor conductors. As electricity takes the path of least resistance, it expends the most of its energy on the vasomotor, or medullated, nerves, except in cases of high-frequency currents, where the effects are more directly noticeable on the sympathetic.

Static insulation and other forms of high-frequency modalities, especially autocondensation, are great equalizers of the nervous forces. In two instances, when treating patients for arterial hypertension with autocondensation, I noticed the hemorrhoids to disappear, and in three other instances I recorded the disappearance of hemorrhoids while treating patients, for chronic nephritis, with static insulation. Could these cures have "just happened" or were they the result of the action of these great nerve-equalizing currents?

The splanchnic nerve is the vasomotor of all the arteries and veins of the intestines, and, as such, is the chief etiological factor in hemorrhoids.

Irritation of the origin of the splanchnic in the dorsal cord—6th to 10th dorsal ganglia—produces inhibitory effects only so long as the blood in the capillaries has not become venous. In hemorrhoids, the blood has already taken on that condition, and irritation produces the opposite effect—that of dilatation.

All of us, no doubt, would prefer to treat the primary cause of the lesion rather than any of the symptoms. Unfortunately, however, it takes much time to relieve a case of hemorrhoids by the method here given. Even if we produce sedation of the dorsal ganglia by the application of positive galvanism or the rapid sinusoidal current, the time consumed is considerable and the patient quits at about the time when visible improvement is becoming manifest.

It becomes necessary, therefore, to treat the hemorrhoids, per rectum, as a symptom;

which in my hands has always yielded good results and satisfied the patient. After all, what does the patient care about reflexes and the action of the splanchnic nerve, if he can be relieved sooner through another channel? Besides, I suppose he is just as likely to have a new attack, whatever method may be employed for his present relief.

The Technical Aspects

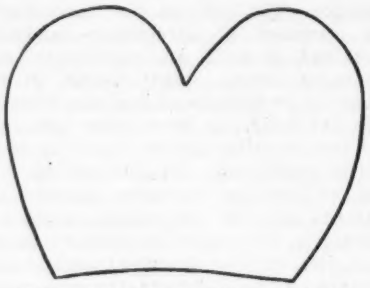
The older method, and the one I generally use, is dependent upon several well-known properties of positive galvanism. First, it produces sedation of the vasomotor, thus decreasing the lumen of the vessels; second, it decreases the vascular supply to the hemorrhoidal tumors, which, being benign, take on the principal characteristics of all benign tumors, that is, they retrograde when their nourishment is interfered with. Third, it relieves the pain and allays the inflammation.

Herewith is shown a suitable electrode, sold by all electrical dealers under the catalog number of 53A. The metallic portion must be covered closely by a piece of kid, a working pattern of which is also shown, actual size. Care must be taken that the seams are closely drawn, so that no portion of the metal is exposed. The kid is well wetted with water; in fact, it should not be allowed to dry at any time, as the seams may contract and expose the metal.

Electrode "Catalog No. 53A."

The patient is placed in Sim's position and the electrode, after being lubricated, is introduced, with the curved side toward the perineum; it is then attached to the anode of a constant-current battery. The usual abdominal pad, well wetted, is placed upon the abdomen and attached to the cathode. The current is now turned on until 25 to 30 ma. is reached (the old technic called for 15 ma.) which is maintained for ten minutes. Treatments may be given every second day.

When purchasing an electrode, one should see to it that the metal portion will not extend so as to cover the external sphincter, as this muscle and the detrusor muscle of the bladder are both supplied from the pudendal plexus, and if during our operation sedation is effected of the external sphincter it produces a corresponding condition of the detrusor muscle, which will cause such a sagging of the bladder that the urine cannot be entirely expelled. In fact, in treating a case of enuresis, where we have a spastic contraction of the detrusor muscle. I am accustomed, for the purpose of sedation, to apply a rapidly interrupted sinusoidal current to the external sphincter ani.



Working Pattern for Covering of Electrode.

In cases of small hemorrhoids that are pedunculated and can be reached, I use the galvanocautery snare, which is clean, rapid, and causes little pain.

In external hemorrhoids, I always use fulguration.

There is no doubt in my mind but that ordinary cases of hemorrhoids may be entirely relieved at a single sitting by using puncture with a needle from the negative pole of a galvanic battery. The operation, however, is so fraught with danger, on account of possible embolism, that I have long since ceased to employ it. The same danger exists in injecting with carbolic acid.

MOST human quarrels arise from the fact that both wise men and dunces exist who are so constituted as to be incapable of seeing more than one side of any fact or idea, while each asserts that the side he sees is the only true and right one.—*Balzac.*

A Specific Treatment for Tuberculosis

By W. C. Goodwin, M. D., Philadelphia, Pennsylvania

EDITORIAL COMMENT.—In "Clinical Medicine" for January, 1911, we published Doctor Goodwin's preliminary report on the treatment of tuberculosis which he had employed successfully for several years. Six years have joined the past, since then, and the author is ready to report on his distant and permanent results, as will appear in the following paper. Without expressing any personal bias in reference to the theory advanced by the author, we cannot but voice our satisfaction at the beautiful showing in favor of calcium sulphide and the sulphocarbolates.

IT is now seven years and nine months since I began curing tuberculosis. The results then obtained were so marked that there could be no doubt as to the value of calcium sulphide and the combined sulphocarbolates. I recollect how strange it seemed then to observe the changes that occurred from week to week, accustomed as I was to the results obtained with forced feeding. Here, the process went on under my very eyes, so to speak, and, stranger yet, it seemed accurately to forecast improvement.

Ample time has elapsed long ago for estimating the value of the work; for, patients then cured are constantly being met or return for consultation who afford opportunity for examination and comparison. It never occurred to me at that time that I should be able seven short years later so to improve upon my original method of treatment that I could effect in one week what then seemed like a remarkable accomplishment in one month. Yet, I believe this to be possible.

Tuberculosis Not a Single Infection

This attainment results through a better understanding of tuberculosis and a truer insight into its complications. For, tuberculosis is not a single disease, caused by the tubercle-bacillus alone. That fact was especially emphasized when, on June 16, 1916, the University of Pennsylvania confirmed the cure of tuberculosis by my method. That confirmation detailed that calcium sulphide does kill the tubercle-bacillus; that the sulphocarbolates do heal the tuberculous enteric ulcer which causes the characteristic fever; and, finally, that tuberculosis always is complicated with hereditary syphilis. In other words, the combined action of the tubercle-bacillus and the spirochæta pallida is necessary for the development of tuberculosis. The adjective "white" in "white plague" describes a symptom of lues and not of tuberculosis.

Some Case Reports

In the following, I will review three cases cured by my method.

Case I. Reported in Clinical Medicine for January, 1911, page 55. Male, colored, aged 24 years. Nativity, Philadelphia. Occupation, errand-boy. Family history negative. Cough; loss of weight; pain at angle of right scapula, increased on riding a bicycle; loss of appetite; feeling of malaise. Examination showed a few fine subcrepitant rales at the right apex and at the angle of the right scapula, areas of increased vocal resonance, slightly shortened inspiration and prolonged expiration; von Pirquet test positive; sputum negative; pulse 85, standing; respiration 20; temperature 36.9° C.; weight 135 pounds. Diagnosis was confirmed by Dr. James Tyson. This man has since been doing a variety of manual labor, but mostly acting as a chauffeur. He now weighs 185 pounds. The lungs are clean, though he has some difficulty with the cervical glands and takes "cold" easily. But, certainly, he is as healthy as the average wage-earner.

Case II. This was reported in the *Medical World* for September, 1911. Female, aged 13 years. Nativity, Pennsylvania. Occupation, schoolgirl. Complained of taking colds, cough, loss of flesh, loss of color, poor appetite. Indigestion (manifested by eructation of gas, coated tongue) borborygmus, epistaxis, great nervousness, sleeplessness. Family history showed that one paternal uncle, one maternal aunt, and one maternal uncle died of consumption. Sputum positive; weight 75 pounds; pulse 96; respiration 23; temperature 37.5° C. Involvement of both lungs was shown by diagrams taken from her case-history. There were also given in detail the daily temperature records and the dosage. This patient took 700 grains daily of sodium sulphocarbolate. (No such dosage is now considered.) Diagnosis, tuberculosis and chorea. She has been a bread-winner for five years, working for an electrical company and later as a clerk in a provision-store. She now weighs 115 pounds and seems very active. And the members of the family say that she is "the healthiest one of us all." However, she is very pale and quite nervous. The lungs show no change since her last examination, five years ago. (There is a small area at the right apex which shows

fibroid healing.) She complains of headaches, backaches, and the like. It is my opinion that there will be trouble from these things in the future. Patients who have been properly treated for the complicating lues do not show these symptoms.

Case III. (Taken from the March, 1912, files and not previously reported.) Female, white, aged 18 years. Occupation, typewriter and stenographer. Loss of weight; cough morning and evening; lassitude, weakness, pallor; von Pirquet test positive; involvement of apex of right lung. She came to the office interruptedly until May, when, on the diagnosis of another physician, she was sent to a sanatorium in North Carolina. There, she grew worse so rapidly that by June, 1912, she returned home. Examination then showed involvement of both lungs, anteriorly to the third rib, right second rib left; posteriorly, to the sixth rib on each side. Temperature 37.2° C. Left knee showed white swelling, which the physician in attendance at the sanatorium advised to be incised and drained. It measured, over the patella, ¾ inch more than that of the right, unaffected knee. There was great tenderness on pressure of the left hip-joint and pain on walking or, indeed, on any motion. Her temperature became rapidly normal; her weight increased, from 99¾ pounds, to 106 pounds by August 1, 1912, the knee was giving but little trouble. The hip, however, continued to pain her on walking and standing. October 1, 1912, the hip showed tenderness only on extreme pressure and the knee a slight tenderness. December 1, 1912, knee and hip both ceased to show any tenderness. The lungs did not entirely clear until July, 1913. The patient has since then married and is the mother of a normal child. She does her own housework and seems fully up to the average mother.

These cases are typical in every way and so selected. I have mentioned the confirmation of the University of Pennsylvania, though unwritten, because, coming from a great institution, it obviously carries more weight than does the confirmation of less prominent individuals, which I personally prize as highly and most of which is just as definite in written statement as was the verbal confirmation by the representative of the university. For, they are certainly few in number now who dispute that tuberculosis is an easily curable disease.

Nonoperative Gynecology

By William Rittenhouse, M. D., Chicago, Illinois

Professor of Obstetrics, Loyola University, Chicago

[*Continued from March issue, page 206.*]

Amenorrhea

In dealing with patients who present themselves for the treatment of amenorrhea, more tact is required on the doctor's part than in almost any other condition for which he is consulted. There ever is present the possibility of the suspended menstruation being due to pregnancy, and very often, to dispel this uncertainty without offending the patient, it calls for the exercise of all the discretion and tact the physician may possess; whatever horn of the dilemma he may take, he is liable to find himself in error. The moral and social standing of the patient may be such as to disarm him of all suspicion, and, yet, the outcome may show that he was deceived. On the other hand, he may find that too ready suspicion has wronged an innocent patient. It is difficult to lay down rules for dealing with these cases, beyond the general one of being both wary and tactful. It will not do to ask every patient whether she is pregnant, neither is it safe to prescribe anything that could not be defended in a court of law.

A lady of the highest moral and religious standing brought her daughter to me for the cure of amenorrhea. The girl had occasionally missed a period or two in the past and there seemed to be absolutely no grounds for suspicion. I prescribed safe remedies, but without results. I then took occasion to say to the mother privately, "If Maggie were a married woman, I should advise an examination for pregnancy." The mother was indignant. Said she: "I would stake my life on Maggie's honor. I *know* there is nothing wrong." Nevertheless, her indignation took another form a few months later, when she found herself a grandmother.

When the patient is married or when she is of easy virtue and perfectly frank about

it, there is, of course, no hesitation in asking any question necessary or in proposing an examination; but, when we are dealing with a single woman whose virtue we have no reason to asperse, the best way is, to ask at the first consultation, "Do you know of any cause for missing your period?" Further than this we hardly are justified in going, unless future developments are of such a nature as to render suspicion nearly a certainty. If the patient is not frank with the doctor, she can blame only herself if future embarrassment is the result.

The Etiology of Amenorrhea

When menstruation does not appear at puberty, the causes most often are either anemia, tuberculosis, nondevelopment, change of climate or imperforate hymen.

As to the second cause mentioned—tuberculosis—a great deal of error prevails in the minds of the laity. An anxious mother will bring her daughter to the doctor and express her fear that, if menstruation is not brought on, "it will throw the girl into consumption"—as they express it. The truth probably is, that the girl already has incipient tuberculosis and the amenorrhea is nature's effort to conserve her strength. She does not menstruate because she can not afford to lose the blood—she has none to spare. This popular delusion is the natural result of the old superstition, that menstruation is a "purification," a process of getting rid of a poisonous substance that would do harm if retained in the system.

Anemia and tuberculosis may cause amenorrhea at other times than at puberty, but this, perhaps, is not so frequently the case.

Nondevelopment or delayed development may be the reason why the menstrual function is not established at the proper time, but here frequently nature corrects the trouble if given a little time.

A residential change of climate at or about the age of puberty seems to have the effect of delaying or suspending menstruation, especially in the case of certain nationalities. The Scandinavian races seem to be rather sensitive to this influence. Immigrants from those countries have more often been found among my patients who sought relief for amenorrhea than those of any other nationality. As a rule, they have been markedly anemic.

Imperforate hymen, with accumulation of menstrual fluid, should be suspected where the patient has had the symptoms of menstruation each month since the time of puberty, associated with a slowly increasing distention of the abdomen. Inspection of the vaginal ostium will reveal the bulging hymen and palpation of the abdomen will show the uterus distended.

After menstruation has become regularly established, its suspension may be owing to one of the following causes: Anemia, tuberculosis, change of climate, exposure to wet or cold, shock, pregnancy, menopause.

Some women are exceedingly sensitive to cold at the menstrual period. Getting wet feet, being caught in a rainstorm, getting chilled, even putting the hands into cold water in some women may prevent menstruation or stop it if it has begun.

There are well-authenticated cases where some mental shock has stopped or prevented the menstrual flow. Fright, grief or great anxiety are in this class.

Pregnancy may exist and, nevertheless, menstruation occur once or even oftener.

After the thirty-fifth year, the possibility of the menopause should be borne in mind.

The Diagnosis of Amenorrhea

The diagnosis of amenorrhea is directed, as a matter of course, not to the fact, but to the cause. The absence of menstruation has been diagnosed by the patient herself: it is the doctor's task to discover the reason for, upon this will depend the treatment. To impress this fact upon the patient, sometimes will aid in getting at the facts. If the woman is told that treatment is likely to fail unless the actual cause is known, she may realize that concealment of it may be to her own disadvantage.

The Treatment of Amenorrhea

The treatment of amenorrhea depends entirely upon the cause. In anemia or incipient tuberculosis, tonics, such as iron, quinine, strychnine, arsenic, or any desired combination of these, may be prescribed. Blaud's pill or, better, the freshly made Blaud's mass in capsules is very valuable. The citrate of iron and quinine also is excellent, although disagreeable to the taste, if given in solution.

Two things can not be too strongly impressed upon the patient. First, the great importance of outdoor life, even sleeping out if possible. If this is not possible, then she should come as near to it as her circumstances permit. Second, she should be made to understand that the *important thing is not, the bringing on of menstruation*, but that it

consists in restoring her to health, when menstruation will take care of itself.

That Ever Present Abortion-Specter

An interesting question is, the exact status of those drugs that are commonly known as emmenagogs—myrrh, aloes, cotton-root, oil of parsley, oil of juniper, and a few others. These drugs probably have some value in the treatment of amenorrhea, but, as they also have a reputation as abortifacients, they should be prescribed with great caution. I believe that their abortifacient properties are greatly overestimated, still, it might be difficult to persuade a jury to take the same view.

These drugs act mainly by producing pelvic congestion: for example, aloes irritates the colon, and oil of juniper irritates the bladder. I have seen patients who had taken aloes to the extent of producing colitis and proctitis, without, however, having brought on the much-desired abortion. I knew one woman who had taken juniper-berry tea until she had set up a cystitis and the most violent strangury I ever witnesses, and, yet, abortion did not occur.

I can best illustrate the risk that a physician assumes in dealing with these cases by citing the experience of a fellow practitioner. A patient called upon him, claiming to have missed a period owing to getting her feet wet. He prescribed a pill containing, among other things, aloes and oil of pennyroyal. It failed to produce the desired result. Instead of going back to him, she took matters into her own hands. Whittling a pine stick into the shape of a pencil, she introduced it into the womb. A few days later, when she had an abortion and a severe septic infection, I was called to save her life. I refused to touch the case until she had made a clean breast of the whole matter in the presence of witnesses. She narrowly escaped death. If she had died, the other doctor might have fared badly before a jury, although his prescription really had nothing to do with her abortion.

Fortunately the treatment best adapted for the various forms of amenorrhea is such as can be defended under any circumstances. The treatment mentioned above for anemic subjects could not possibly produce abortion. Neither could that which is best adapted for amenorrhea caused by exposure to cold. Here, the problem is, to relieve congestion by restoring the equilibrium of the circulation. This can be done by prescribing acetanilid or a similar coal-tar preparation and advising hot foot-baths, hip-baths or general baths. Sometimes, viburnum prunifolium constitutes a valuable aid.

Since the greatest proportion of legitimate cases are the result of either anemia or cold, it is plain that there is little justification for prescribing questionable remedies.

Where the shoe really pinches in this whole matter is, that nearly every physician is constantly pestered by women who want to be relieved of an undesired pregnancy. Occasionally there are girls who have been deceived and who, naturally, excite sympathy. But, mostly they are married women who have no excuse, except selfishness or indolence, for shirking their maternal responsibilities. Often they are good patients in other respects, from excellent families, and the pressure brought to bear upon the doctor then is very strong Sometimes the patient is a woman whose health has been broken down by frequent childbearing and who, from the physical standpoint, would seem to be entitled to have a show for her life. However, no matter to what motive in the doctor's mind the appeal is made, whether it be to save a woman's good name, to help a poor mother already overburdened with children or whether it be the fear of losing a good patient or a temptingly large fee, the only safe course for h'm to pursue is, to shun that kind of business absolutely. He will lose some money, it is true, but, he will preserve blissful peace of mind.

[*To be continued.*]

Success

By A. L. Benedict, A. M., M. D., Buffalo, New York

Consultant in Digestive Diseases, Columbus Hospital; Attendant, Mercy Hospital; Editor, "The Buffalo Medical Journal"

THIS article is addressed particularly to recent graduates. Success may be defined as doing a good deal better than the average or, more cynically, as getting more than the average credit and reward for having appeared to be better than the average. Success is of many different kinds—financial, social, executive, intellec-

tual, reputational, or other—and success in any one of these lines does not necessarily involve success in others.

Success is relative and must always be judged according to relative possibilities. For example, any of our prominent and financially successful physicians or surgeons may be considered to have achieved the same degree of success as a merchant prince, mine owner or any other business man, which latter, of course, have much greater opportunities for making money. Likewise, if we compare two members of our own profession, not exactly of the highest grade of renown, but who are busy, well esteemed, and who have clientèles of equal social and financial rank, they may be said to be equally successful; but it is self-evident, if one is an internist, commanding the highest routine fee schedule for routine attendance and consultation-fees of from $10 to $50, that he cannot earn as much money as does a surgeon commanding an average fee of from $100 to $500 for a capital operation and $5 to $25 for a minor one.

Financial Success

A good many men are eating their hearts out because they fail to attain the limits of success possible. The present estimate is, that about half a million persons, i. e., about one-half percent of the total population, will pay an income tax. Probably about one-tenth percent of the tax-paying half million have incomes sufficiently far above the line of exemption to warrant being designated as successful in the financial sense.

While the average income of members of the medical profession is higher than the average of the entire population, because the requirements for a license rule out the lowest grade of labor, the conditions are such that only a very few members of them in each of a very few large centers of population can possibly approach the level of the highly successful man in business, law, politics, and even in science and pedagogy.

The following concrete example of the highest grade of medical financial success will illustrate this point better than would a large amount of philosophy. A celebrated internist spent half a day on a train, saw a patient between trains in less than an hour, confirmed the very obvious diagnosis of cancer, declared that there was nothing to be done but to operate, and received a fee of $1000. Those concerned acting on this hint, an equally celebrated colleague was summoned, who made the same trip, declared that operation was out of the question, and also received $1000.

Now, it is perfectly plain that one can count on his fingers all the internists of the country who could command such a price for such a service, and could count on his fingers and toes all the surgeons equally fortunate. No amount of professional skill and prestige would be available without residence in a very large city, and further limitations can, obviously, be made; so that, by the law of chance, no amount of initial influence, ability, industry or even professional success can extend this opportunity of financial success beyond a very few. Moreover, very few patients can or will pay such fees even to men of the highest success in the profession.

Remembering that there is a limit of physical strength which it is impossible to pass, and that the practice of medicine with its allied branches fluctuates, so that the maximum amount of work theoretically possible cannot be maintained throughout the year, and further remembering that there is a limit to the fees patients can or will pay, on the average, the following limits may be assigned to professional success of a financial nature:

For a physician in the country or small village, $3500; for an internist or specialist, aside from specialties involving major operations in cities of about half a million, $10,000 to $15,000; for a general surgeon or gynecologist, $25,000. For cities which have both a large population and the drawing feature of a medical center, these last two sums possibly may be doubled; and it is estimated that a few professional incomes have reached or exceeded $100,000. Probably 20 percent of the profession in cities earn more than $3000 a year, and 5 percent more than $5000.

In estimating financial success, a very practical distinction must be made between capital acquired by inheritance, matrimony, and similar sources, that acquired by investment, and that represented entirely by professional earning-capacity.

While education, equipment for practice, independence, and influence depend somewhat on the mere possession of money, this does not seem to be true in our profession beyond a moderate degree, so that professional earning-capacity or even the recognition of being financially successful does not seem to depend upon the mere possession of money. In fact, beyond a certain point, the

possession of wealth seems rather to inhibit direct financial success in medicine, quite apart from the lack of impetus to develop this form of success. For example:

Take two men of equal professional opportunity and influence through position, one possessed of considerable inherited wealth, the other of a moderate amount acquired in this way by marriage; the former better educated and of brighter mentality; both equally attentive to their work: the former probably earns a tenth of what the latter does, and is generally regarded by the profession as entirely dependent on accidental support, his ability and skill being not nearly so well recognized.

Even personally acquired wealth, by thrift and investment, does not seem to increase the actual earning-power through practice so much as might be expected. One of my friends, for example, who certainly is no less able mentally than formerly and no less industrious, complains that he has to use up interest to meet current expenses, his practice showing a falling off.

Social Success

While in certain instances there seems no question about opportunity in institutional work having been pretty strictly limited to social acquaintance, one constantly meets with exceptions in both directions. On the one hand is encountered a man without family backing, social attainments, money or education, who possesses a tremendous amount of influence; on the other hand we see one who has every such advantage, yet, who never seems able to get positions which he covets.

Sometimes one can explain these exceptions, as they theoretically ought to be explained, by the possession of great ability and industry in the one case and of lack of these qualifications or by gross misuse of opportunity in the other case. But sometimes one can not. It seems, even if we grant that there is no such thing as luck, that there are purely accidental combinations of circumstances that determine success or its absence.

One also witnesses curious fluctuations of influence. Without obvious cause, a man once in disfavor generally or in a certain group of especial prominence becomes prominent and is sure of support in everything that he undertakes, or, perhaps, in everything but intrusion into some particular institutional work. Not only the lack of things that are cynically supposed to make for influence, but even gross breaches of professional ethics may be pardoned. On the other hand, just as the ovum expels certain parts in its maturation, so a man who once apparently was a constituent part of some medical circle is extruded and that without plausible cause.

Sometimes the waning influence of one age-group is apparent and the "younger bunch" gains ascendency, perhaps taking bitter revenge on previous exploitations of influence. If one can view these changes in proper perspective they are exceedingly interesting, although not always enlightening.

[*To be continued.*]

The Clinical Diagnosis of Cancer

Its Nonoperative Eradication by Means of the Zinc-Ionization Method

By G. Betton Massey, M. D., Philadelphia, Pennsylvania

THE efficiency, but likewise the labors and the responsibility of the general practitioner, have been greatly increased of late by the development of more or less enforced diagnostic consultation with public-health authorities in a widening list of epidemic and endemic diseases. Some workers, already too poorly paid, look askance at this addition to their duties as well as at the invasion of their authority in their private relations to their patients. Nevertheless, sober second thought no doubt will convince all that, however burdensome at times, this movement is in the right direction.

As a matter of fact, medical workers have been in altogether too secluded a position in the past. An engineer's work, for instance, being a matter of recorded calculations and of a physical product—be it a bridge or building or other constructive work—stands before all eyes as a test of efficiency. The lawyer's final work stands revealed in the presence of his peers and before the court. But the physician as a rule practices only in the presence of his technical inferiors, whose judgment of him frequently is influenced by outside considerations. That so few imperfect conclusions are actually drawn and

so little slovenly work is being done by the doctors themselves, can be due only to the refinement of character that so commonly attends the medical life in all of its walks.

The Early Diagnosis of Cancer

Whether our high calling is a sufficient stimulus to leaven the whole mass, I shall leave to others to determine. The object of these reflections is, to emphasize the lack of efficiency of some of us in a diagnostic line in which we receive no help from the state and in which we, in the nature of things, are unlikely to receive aid. I refer to the early diagnosis of cancer.

Some one, it is true, has recently suggested that state laboratories be authorized to examine for physicians, without charge, the tissue from suspected neoplasms. While this would, apparently, be of service in assisting in early diagnoses, it is in reality a most dangerous suggestion; for, should any of the tumors cut into be malignant, immediate dissemination of the malady throughout the system would be favored by the traumatism. As a matter of fact, not more than five minutes should elapse between the wounding of a cancerous growth, for securing a specimen, and the total destruction of it. It is unthinkable that our efforts should lead to what still is a local growth being converted into an incurable general infection by the opening of lymphatic and venous channels to the inward transmission of the infected cells.

Yet, until family physicians can diagnose cancer more promptly than they now do, we shall continue to hear the sad repinings of patients who were put under treatment too late. For, albeit we do not as yet know surely to what cancer is due, we do know for certain that is is purely local at its inception and that more than 93 percent of external cancers have been cured by the new methods of ionization and destructive heat, while on the other hand, only in 20 percent of those that were neglected cures have been effected.

How shall these results, particularly the condition last named, be improved? My personal feeling, after many years of study of the early histories of these patients, is, that the value of a presumptive clinical diagnosis has been too little regarded by the physicians first consulted. The supposed necessity of making a microscopic examination has led to delay. In reality, the microscopic evidences are inferior to the clinical signs of malignancy; the chief value of the former being corroborative of the presumption of malignancy in most instances, besides being a means of determining the particular variety of the neoplasm.

The Clinical Diagnosis of Cancer

To be explicit: A clinical life-saving diagnosis of cancer can be made early, while the growth still is local and curable, by mere sight and touch, in a number of localities, notably in the following:

1. The skin. A crusted or ulcerated growth of the skin, or one that shows unusual blood supply, that is painless, not tender and whose growth can be measured in months rather than years should be tentatively diagnosed as cancer.

2. The mucous cavities and muco-cutaneous junctions. A painless growth, not tender, that is hard to the touch and whose increase in size has been appreciable in recent months and apparently still continues should be regarded tentatively as a cancer, whether ulcerated or not.

3. The breast. Any nodule in this gland is dangerous. A tender or painful nodule may be a cyst, with future malignant possibilities. Now that we have a means of eradicating the nodule itself without scattering the diseased cells, throughout the breast, we are in a position to order its extermination earlier than when amputation of the breast was essential to success. Similar experience has made me sympathetic with a physician's reluctance to order total destruction of the female breast containing a nodule that we cannot yet positively pronounce cancer; but, the means of a certain diagnosis in this stage being either the removal of a specimen for biopsy or else the waiting policy—and both procedures having practically a final mortality of 100 percent in the positive cases—I urge an apparently middle course.

This course consists in the destruction of the nodule at once, no matter what it is, by the surgical ionization, or electric-heat, method. If the growth be benign or even a chronic lobular mastitis, it is well disposed of in this way, a scar being the only permanent drawback. Should it be a cancer and still local, eradication would result. Should the axillary glands be found to be enlarged, they should, either then or later be destroyed by a similar procedure (in the latter case, preoperatively implanted cells becoming large enough to be found).

Need of a Specialist Consultant

Increased efficiency in the family physician's relation to cancer, therefore, consists in part

in early personal diagnoses, but, to these should be added the intelligent selection, in a way, of the method of a properly equipped consultant, remembering that eradicative methods are imperatively required in all early cases that possibly still are local and that eradication should not be entrusted to a surgeon who does not believe in the parasitic nature of cancer and uses methods capable of spreading it in the effort at removal. On the other hand, to allow these cases to pass into the incurable stage by the use of radiation methods is but little better than total neglect.

In the small skin epitheliomas, eradication by zinc ionization in the hands of the family physician who is also an office-worker is a possible addition to efficiency. And this brings up the subject of radium-radiation, not hitherto mentioned in this paper.

Virtues of Radium-Radiation

Of course in about three months or so, such a small epithelioma of the skin could probably be cured if we employed fifty thousand dollars' worth of this remarkable mineral radium, and possibly without resultant scar; although this does not necessarily follow, for, great skill is demanded in the handling of radium, to avoid burns both to patient and operator. I know of no other cancers cured by means of radium save these little skin-epitheliomas. But, I also know that in my personal experience 62 out of 66 of these small skin-epitheliomas have been cured by the expenditure on them of about ten cents' worth of zinc-ions, not counting the skill necessarily employed. The technic of this method—which may be successfully carried out by any physician possessing an ordinary galvanic battery having a proper meter and controller—may best be illustrated by the details of the following hitherto unpublished cases:

Illustrations

A woman, aged 51, was first seen November 21, 1900, with a somewhat vascular growth the size of a pea in the sulcus above the ala of the left nostril. As it was large enough for the removal of a specimen and I was carefully guarding my diagnoses for demonstration, a small piece was cut out immediately before destruction and the clinical diagnosis of epithelioma was concurred in by a well-known pathologist. I should say, parenthetically, that the removal of such a specimen requires more local anesthesia than does the treatment itself in these small, clearly malignant growths and constitutes an interference with the accuracy with which one can follow the extension of the whitening produced by the ions in the destruction of these little neoplasms.

Six needles, about the size of medium sewing-needles, were cut with shears from a thin sheet of zinc, such as can be obtained at stove-stores (not galvanized iron, of course), and these were sharpened with a file and then attached to pieces of No. 34 cotton covered copper wire, by winding the wire about the butt ends of the needles and bending the latter over with pliers. With these wires connected to the positive pole of a galvanic current and the negative with a pad placed under the patient's back, the needles were inserted radially from the center toward the periphery (thus making the insertion almost painless, as the needles did not go beyond the edge of the nerveless growth). Then a current, that finally attained to 10 milliamperes, was turned on gradually and maintained for thirty minutes, at the end of which time the growth was white and apparently completely devitalized. The after-treatment consisted in applying an ointment dressing made by adding 1 part zinc-oxide ointment to 4 parts of petrolatum.

The small wound healed nicely, leaving only an inconspicuous scar. Eight years later—in November, 1908—a small recurrence of the growth was detected near the scar. This received a similar treatment. Fifteen years later—in October, 1915—a very small pearly nodule near the scar was destroyed by a weaker application. After now nearly another year, there is no recurrence of the tumor.

A farmer, aged 74, applied for treatment on June 22, 1911, with a scaly growth on the cheek below the left eye, about the size of a coffee-bean. It had been there for some years and was gradually increasing in size. A 3-milliampere current was applied with four needles, as described above, for thirty minutes. Two years later, a very small recurrent tumor was subjected to a 1-milliampere current for ten minutes. There has been no recurrence to date, three years since the last treatment.

A glassblower, aged 43, was first seen on January 27, 1913, who had an ulcerated growth on the right cheek, 1 centimeter in diameter, with indurated base. It had followed a nick made by a barber one year before and refused to heal under a variety of treatments. A current of 15 milliamperes

was applied, with four needles, for thirty-seven minutes. There is no recurrence to date, more than three years.

A carpenter, aged 66, applied for treatment March 22, 1913, with a hard-based epithelioma on the tip of the nose, which had been made worse by a carbon-dioxide snow application. A current of 50 milliamperes was required for twenty-five minutes to secure eradication, under local application of cocaine. There is no recurrence to date, now more than three years.

The General Practitioner in His Relation to Practical Psychiatry.

Second Paper

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The Psychopathic Personality

THE psychopathic personality is not, strictly speaking, a separate entity. It belongs to the same category as the constitutional inferior, referred to in my previous article. (March, p. 196.) I may say that the terms "constitutional inferior," "psychopathic personality," and "constitutional psychopath" are not well defined. Different psychiatrists apply them to different classes of individuals, according to their own conceptions. However, this is merely an academic question. The practical thing is, to recognize the abnormal individuals, while the application of one or another of these names is a thing of small importance.

The psychopathic personality exists at a relatively higher level than does the constitutional inferior. He may be quite ambitious, more or less efficient, and even successful. However, he is unable to meet adequately the big issues of life. He is prone to avoid responsibility and when he meets a problem that he cannot solve satisfactorily he does not react to it as would a normal person under the same circumstances. When a normal person meets some personal difficulty which he cannot solve satisfactorily, he makes the best of it. He forgets it or sublimates it; that is, he turns his activities into channels that will let him put his troubles out of his mind and make the most of his life. The psychopath, on the other hand, fails to compensate properly for such a situation, and the result is a psychosis of one kind or another or else abnormal reaction such as alcoholism or suicide.

Many, perhaps I may say most, of our suicides occur in the case of persons who have some mental conflict for which death is the only solution, from their point of view. Thus, for example, a woman loses her lover by death. If she is normal, she sublimates by turning her attention and energy in some direction that will give her a certain amount of satisfaction, a substitute for what she has lost, say, nursing or social work. The psychopathic woman, on the other hand, is unable to sublimate properly, she cannot find satisfaction in any of these things. She can find no solution of the problem of how to satisfy her craving for the lost lover, neither can she forget, but dwells constantly upon the subject until it assumes undue proportions in her mental life. Finally her brooding develops into a psychosis or she solves the problem, according to her mental makeup, attempting to escape her grief in this manner.

The socalled prison-psychoses occur in individuals of this type. An individual apparently normal mentally is sent to prison for some offense. Prison life is repugnant to him, but he can not escape it. If he is a psychopath, he can not make the best of it, and there is bound to be an abnormal reaction. He must get away from it somehow, and a psychosis is the inevitable result. Give him his liberty, and the psychosis disappears at once. It is not that he is a malingerer, but, with the possession of liberty, the problem disappears and there no longer is occasion for the abnormal reaction to compensate for it.

The psychopathic personality is a borderland state, being neither normal nor distinctly abnormal. He may be efficient, but he does not have "sticking" qualities. A routine life is not for him, because sooner or later it involves some responsibility and he does not want that. Give him proper surroundings, work to his taste, obviate uncomfortable problems, and he will get along all right. But, it is manifestly impossible to comply with these demands in the average case, consequently it is but a matter of time when he

meets something that will throw him out of balance.

In studying a series of cases of this latter type, I was impressed by the tendency to lying, alcoholism, and drug abuse, also the suicidal tendencies. There were a few with a homosexual trend, and all of them had, under some form of stress, developed psychoses resembling dementia præcox or manic-depressive insanity. Removed from the surroundings and circumstances that brought on the psychosis, every one recovered more or less rapidly, usually completely. They are now out in the world again, but only until they become subject to some other stress.

The problem of treatment of these subjects resolves itself into an attempt to discover the difficulty that brought on the psychosis in a given case and so far as possible to remove the patient from the cause and caution him to avoid the environment which brings out the untoward results.

The Influence of the Milieu Illustrated

For the sake of illustration, I will quote briefly a case of this kind:

A young man of twenty-one, of healthy German-Jewish ancestry, was a patient in the criminal insane department of this institution. He was the third of a family of five children, his father being a prosperous confectioner. The patient was given good educational advantages, but failed to utilize his opportunities. Between father and son there never existed a proper understanding. At puberty, the father talked to him about masturbation and began to punish him severely for real and also for fancied offenses in this direction. The boy adored his father, but the latter was always too busy to give his son any comradeship or affection. At last the boy began to run away from home, because he could not stand his father's treatment. He would stay away from home for months at a time and when he returned there would be painful scenes and he would be sent to some school or other; but he never stayed long in the place. He became more or less of a hobo, working at odd jobs here and there. He was ambitious to become a newspaper-man, but, with his poor education, could not, of course, obtain work at this. He did have one or two poems published in a Chicago newspaper, much to his delight. In 1912, being down and out, he enlisted in the navy, but was discharged three months later for sodomy. After four years of a variegated career, he enlisted in the army, again being down and out. He soon learned that he had committed a serious offense against the law by enlisting after a dishonorable discharge and, in an attempt to escape arrest, was absent without leave, on two occasions for periods of several days, and for this was punished. He then deserted, but was soon apprehended and sent to the barracks to await trial.

At this juncture, the hapless fellow reasoned to himself that, if he were to feign mental disease, he might escape the results of his crime, so, began to imitate epileptic convulsions. The physicians were suspicious of the genuineness of these, but he persisted in them. After his trial, he was sent to prison to serve his time. He continued his malingering, but eventually experienced a real depression and then was sent to this institution. At once there was a change. He has shown no mental or other diseases since his admission He is the best worker in the ward and has cooperated well at all times. Under the guidance of a well-educated patient, he is trying to repair his neglected education and devotes his spare time to reading and writing. Recently he wrote a poem, not especially clever, but at least showing that he is not without some talent.

Here we have a young fellow who is normally intelligent and had good opportunities, but who did not "make good" because of the unpleasant family situation. Had he been normal, he would have succeeded in spite of this, but, being a psychopath, he was led into a wandering, irresponsible life. However, during his stay here, he has gained some insight into himself and he may yet make more or less of a success of himself.

I next wish to take up a type of individual which it is even more important to recognize than the foregoing. I refer to the "Praecox Personality."

[*To be continued.*]

What Others are Doing

QUININE TREATMENT OF MALARIA

In the majority of cases of malaria, the administration of quinine by mouth, as it is customary, undoubtedly meets every requirement, at any rate, in the tertian and quartan types. However, it should never be given in the form of tablets and pills, since it is not unusual to find these in the stools of malarial patients, having passed undissolved through the intestinal canal. While this does not apply to cachets, capsules, tablet-triturates or soluble granules, it is best to give the quinine in solution.

Dr. W. E. Deeks points out in an interesting article contributed to the *Southern Medical Journal* for May, 1916, that for the quinine to be absorbed into the circulation, an acid medium is necessary. However, when the body-temperature is high, the natural secretion of hydrochloric acid in the stomach is lessened or entirely absent; in which case the quinine is apt to pass through the intestinal canal undissolved, since its contents are alkaline. For this reason, Doctor Deeks claims, it is far more certain and effective to give the drug in solution.

Doctor Deeks' experiences led him to conclude that the best and quickest results were obtained by giving 15 grains of the alkaloid three times daily, until the temperature had remained normal for three or four days. After this, the dose was lessened to 10 grains three times daily for another week, the patient being directed to take a total of 20 grains daily during the third week.

In addition to the quinine-treatment, the author—whose experiences were gathered during seven years' attendance in the wards of the Ancon Hospital, in the Canal Zone, in about 50,000 cases of malaria—made it a routine to start treatment with a 3-grain dose of calomel, following this by 1 ounce of magnesium sulphate after eight or ten hours. He found it advantageous to repeat the magnesium sulphate after the patient's temperature had dropped.

While this simple procedure sufficed in a great percentage of the cases, it was not enough in the cerebral and pernicious types. One reason probably is, that in these latter types the organisms localize in some part of the peripheral circulation so that the quinine has to pass through the liver before it can reach the distant organisms, while no doubt some of it is changed or destroyed in the liver.

In these cases, therefore, it is necessary to get the quinine to the peripheral circulation as promptly as possible, and this is best effected by administering the solution parenterally, that is, hypodermically, intravenously or by hypodermoclysis. The hypodermic method was the one most frequently chosen and gave excellent results, the contents of ampules, representing 7 1-2 grains of the dihydrochloride, being diluted with 10 mils (Cc.) of physiologic salt-solution and injected deep into the subcutaneous tissue. The site of injection is thoroughly massaged and then a hot-water-bottle applied, in order to prevent necrosis and abscess.

In the author's opinion, better absorption is insured by the subcutaneous than by the intramuscular introduction. Usually two injections of 7 1-2 grains each were given, at two- or four-hour intervals, until a total of from 45 to 75 grains was administered, according to the condition of the patient; but, as soon as the stomach could tolerate the quinine, giving by mouth as above directed, was resumed. In the very grave cases, the author employed the intravenous method with very gratifying results.

The only precautions necessary are, strict surgical cleanliness and the diluting of the quinine-solution from 250 to 300 times with physiologic saline solution, after the suggestions of Gilchrist, who found that with this dilution there is no danger of the formation of emboli. The longer this method was used, the more often it was resorted to in cases of severe infections; and, in a competent physician's hands, it is perfectly safe.

In some cases of grave infection accompanied by severe and persistent vomiting, also in the algid types, quinine administered by rectum frequently subdued the vomiting and produced the desired result. About 10 or 12 ounces of warm physiologic salt-

solution containing 60 grains of quinine was injected high up with a rectal tube, after a preliminary cleansing enema.

It was also found that in cases of malarial cachexia, which occurred chiefly among white foreigners who would not remain long enough under treatment and whose bone-marrow seemed to be affected, a few initial doses of quinine, either hypodermically or intravenously, seemed materially to hasten convalescence.

DYSENTERY AS CAUSED BY CONSTITUTIONAL INFECTION WITH THE SPECIFIC BACILLI

After alluding to the relatively small percentage of bacteriologic corroborations of diagnoses of dysentery positively determined clinically, Stephan Bruenauer, of Laibach (Austria), seeks to establish the reason for this difficulty in demonstrating the specific microbe in the feces, in comparison with cases of cholera (*Militaerarzt*, 1916, p. 531), briefly as follows:

1. The exciting organism may happen to be characterized by peculiar lability; (2) it may be sparsely present; (3) it may be localized principally in the colonic mucosa and liberated only periodically, after ulcers open; (4) unsuited method, either nonelective culture-medium or one favoring overgrowth of other organisms; (5) the disease-germ flourishes in the circulation—and to this phase Bruenauer devotes his attention specifically.

It is a fact that up to very recently (in distinction from, for example, typhoid and paratyphoid fevers) the dysentery-germs have not, hitherto, been found in the blood and urine of patients—or at best only extremely rarely so—in contrast to the typhus-group with its symptom-complexes of a general infection, dysentery has been accounted as a strictly localized process, in which the specific inciting agent occurs solely in the lymphatic glands of the affected section of the gut.

Now, however, we have the recent testimony of Ghon, Roman, and Fraenkel, according to whose investigations the assumption is justified that a general infection with the dysentery-bacilli is a far more common occurrence than hitherto has been believed. This theory, the author sets forth, is strengthened by the fact that in one large epidemiologic hospital there have of late been obtained directly corroborative results; the report showing that out of 68 positive cases of dysentery bacteriologically proved the specific bacilli were demonstrated in the urine in 4 of the cases and in the blood in 1 of these patients.

Although thus far looked upon as the effect of the circulating toxins absorbed from the intestine, the author concludes, it is much more plausible that the various acute inflammatory processes complicating the disease are a direct consequence of the presence of the pathogenic germs in the circulation—referring, for example, to endocarditis, myocarditis, conjunctivitis, iridocyclitis, otitis, as also the rheumatides in the form either of neuritis and arthritis or of inflammation of the muscles and tendon-sheaths.

The foregoing premises being granted, it follows, the author points out, that bacteriologic methods in this direction must be perfected, while the treatment needs must accommodate itself to this altered view. Further, since more and more the conviction is gaining ground that nearly all infections are, sooner or later, of a mixed nature, the presence of the pyogenic germs must here also be considered.

AMEBIC DYSENTERY IN CHINA

No doubt part of the data contained in the following abstract will interest some of our readers, the original being contributed to the *Deutsches Archiv fuer Klinische Medizin* by W. Fischer, of the German Pathologic Institute at Shanghai.

Amebic dysentery, as is well known, is one of the most important and generally prevalent diseases of the tropical and subtropical countries, the greatest number of cases occurring during October to December, inclusive, while the most virulent and fatally ending ones fall into the hottest months—July, August, September; and these latter, the most serious cases as a rule, are first attacks, the other ones more commonly being in the nature of relapses.

Neither age nor sex make any difference as to vulnerability, except that liver-abscess as a complication is more frequent in males. In the majority of cases, even in the fulgurant ones, fever is absent, although a febrile prodromal stage generally precedes the typical intestinal symptoms. The mucus of the stools mostly is extremely viscous, glary like egg-white. It also may contain some blood, often in the form of fine streaks; and, while sometimes microscopically not discernible, it may completely cover the mucoid masses. The absence of a whitish-gray coloration of

the mucus (produced by the presence of leukocytes) is important diagnostically, in that it excludes the bacillary type. The bloody mucous masses very often are entirely devoid of fecal matter, and exhale a characteristic mawkish odor.

While an experienced clinician will have little difficulty in recognizing amebic dysentery by mere inspection, this may become impossible in chronic cases of the disease. However, when it comes to the microscopic tests, the author insists upon a clearcut distinction between a dysentery the result of the pathogenic type of the amœba dysenterica and that produced by nonpathogenic amebas.

Fischer positively maintains that there is but one kind of dysenteric pathogenic ameba and that the distinction between entamœba histolytica and entamœba tetragena cannot be upheld; for, the histolytica merely is a degenerated tetragena, and the entamœba coli is not pathogenic.

It must be borne in mind that the amebic and the bacillary forms of dysentery may occur simultaneously in a person (the Shiga-Kruse type), although such cases are not frequently encountered in Shanghai.

The most frequent complication is amebic hepatic abscess, although comparatively rare in women and children in Shanghai. The mortality there is given as between 2 and 3 percent.

SUBSTANTIAL DIET FOR DYSENTERIC PATIENTS ADVISED

That the adjustment of the diet is the paramount element in the management of dysentery-patients, all clinicians of experience will agree to, in the opinion of Franz Hamburger, inasmuch as the disease is one of the digestive canal. On the other hand, he considers (*Wien. Med. Woch.*, No. 13, p. 554) that altogether too great cautiousness still prevails with regard to the kind of foods prescribed; too little thought, he maintains, is given to the fact that this pathologic process is confined to a division of the gut not concerned with digestion proper, very often, indeed, the small intestine and the stomach remaining entirely intact even from the first. And, if there are initial vomiting and ileac disturbances, this rapidly subsides, to give way to a delimited colitis.

What sense, then, is there, the author demands, in overcautiousness about the patient's diet, in keeping him upon an exclusively liquid diet—gruel, pap, milk? If this question is justified on theory (and the theory and its application in practice by no means are new), the late experience with considerably more than 200 victims, treated at the garrison-hospital of Mostar (Austria), has furnished ample practical support.

Assuredly, it is irrational to offer hearty victuals to sick people to whom the food is repugnant; when, however, dysentery-patients show appetite, the doctor will find them, without exception, digesting meat and vegetable rations without difficulty, even though the passages be of a sanio-purulent nature. For, appetite returned, the stomach must have resumed its functions; moreover, if the stools are properly constituted again, one may consider the apparatus ready for the work.

The criterion for the attending physician is, of course, that the passages have become of thick pultaceous consistence or, maybe, formed, even firm, for full twenty-four hours, instead of consisting of nothing but a bloody purulent mucus, without any fecal matter. Under the prior circumstances, provided the stomach is in good condition, ordinary food can be borne and digested, and may be ordered without compunction.

Needless to say, the author reminds, no one would start in with full meals of beef and sauerkraut. A rational dietary will, rather, carry ragoût of fowl or veal, eggs, and "light" vegetables, these including, say, spinach, carrots, green peas, stewed tomatoes; in other words, the kind of foods allowed after any intense febrile attack. The patient reacts instantly, so that in a few days he is advanced to more hearty food—roast veal, ham, or whatever experience may have taught.

Correlatively, as a matter of course, in the acute stage and before the reappearance of hunger, and while yet the enteric stools persist, a liquid diet is in order, Hamburger prescribing mucilaginous soups, a little cracker or zwieback, cacao, tea, and red wine. He also mentions decoction of "ku feke"; but this is beyond this writer's ken.

Not once, the author avers, has he seen the slightest harm to follow from this regimen, while the benefits are truly great. The period of convalescence of these subjects of an "incautious" regimen is markedly cut short and the individual placed in position to resume his vocation, strong and bright, instead of wasted from enforced starvation, often bordering on inanition, victim of a "cautious" therapy. Naturally, these remarks do not cover cases exhibiting symptoms of a severe intoxication or of intense enteric affections.

Although his experience has been limited, the author mentions that a similar regimen

as here outlined has proven equally satisfactory thus far, when it was applied to typhoid fever.

THE EFFECT OF SOAP UPON TREPONEMA PALLIDUM

Since it has been recognized that syphilis infection may be acquired innocently in a variety of ways, as for instance through using a common drinking-cup, or a common towel, precautions aiming at delimiting these possible sources of infection have multiplied; and it is particularly barbers upon whom pressure has been brought to bear, with, no doubt, resulting greater cleanliness and, for instance, a more punctilious use of individual towels. Nevertheless, the preventive measures which the average barber employs are not likely to be sufficiently energetic to disturb the equaninimity of the ordinary domesticated bacterium or spirochete.

It has been found experimentally that the treponema pallidum may live for as long as eleven hours on wet towels exposed to daylight at room temperature, so that for this reason contact-infection might easily be contracted in certain barber-shops if, fortunately, it were not for the fact that soap is injurious to their motility and to their life.

In *The Journal of the American Medical Association* for March 31, Major Mathew A. Reasoner, of the medical corps of the United States Army, reports upon the results of a series of experiments which he made with solutions, in distilled water, of "ivory" soap and various kinds of shaving soap. To the action of these solutions testicular juice rich in treponemata was exposed, obtained from rabbits with experimental lues, with the result that even after as short a time as the period required for manipulations and examination no motile spirochetes could be discovered, while those few that were found mostly were swollen and distorted, except occasionally, when they seemed to be adherent to the glass.

The result of these and various other experiments were sufficient to convince the author that the organism of syphilis can not live in the presence of a solution of soap of even a considerable degree of dilution, and that the lather as used in shaving, say, is sufficient to cause their immediate death.

Thus, it is possible that some of the initial lesions on the face that have been ascribed to the barber may have been caused by the infection being transmitted from another patron or perhaps the barber himself by a towel wet only in plain water. Another possibility is, that the person immediately after shaving and while still having many minute abrasions on the face has submitted himself to osculatory salutes from an infected prostitute.

In view of these facts, it would seem that a solution of soap or the lather should have some value as a prophylactic measure against syphilis, although, for several reasons, probably not equivalent to that of the mercurial preparations now in use.

SYPHILIS AS AN ETIOLOGICAL FACTOR IN EPILEPSY

Modern methods of research have enabled us, not only to ascertain the etiology of many diseases which hitherto have been obscure, but also to obtain information concerning the influence that is exerted by various viruses upon the origin and course of certain affections believed to be without any relation to such agencies. It is notably the tests for hypersensitiveness, more particularly the von Pirquet test for tuberculosis and the Noguchi's luetin test for syphilis, and also the serodiagnostic tests that have made it possible to determine the fact that the virus of tuberculosis and that of syphilis stand in relation to conditions that had never been viewed in that light. We recognize now a tuberculous rheumatism and other forms of occult tuberculosis, as we acknowledge the existence of various forms of occult lues venerea.

In the etiology of epilepsy, as also of other diseases of the nervous system, syphilis has long been incriminated as an important factor. True epilepsy may follow the remote cortical degenerative effects of lues, yet, it is hard to indict this malady as the sole causative agent. However, epileptic attacks of a syphilitic nature are usually preceded by headache and are often associated with other neurotic changes and monoplegias characteristic of syphilis of the nervous system. The inter-paroxysmal state is quite likely to be characterized by more or less loss of memory, intellectual weakness, and, in some cases, by an apparently irresistible desire to sleep at odd times and places. In many cases, some disease of the cranial bones is an intermediate factor. No pains should be spared to determine definitely by serological test the presence or absence of syphilis in any suspected case of epilepsy, even though the

neurological examination reveals no clinical symptoms of syphilis.

In a communication to *The New York State Journal of Medicine* (May, 1916), Dr. William T. Shanahan discusses the action of the spirocheta pallida upon the nervous system, wherein he shows that often it is impossible to demonstrate the spirochetes in the nerve lesions, and concludes, with Auer, that "not uncommonly in general paralysis or cerebral syphilis there is a pronounced lack of correlation between the symptomatic and microscopic findings." The same, Shanahan adds, should hold true in those diagnosed as epileptic. As evidence showing the possible relationship subsisting between syphilis and epilepsy, he presents nine abstracts of histories of patients at Craig Colony in whom evidence of syphilis was obtained. In most of these cases, the causative relationship between the syphilis and the epilepsy is quite clear. Nevertheless, in a series of 886 patients at the colony to whom the Wassermann test was applied, only 22, or 2.48 percent, gave a positive reaction. This would suggest that syphilis plays a less active role as a causative factor in the occurrence of epilepsy than has been thought heretofore.

Despite this fact, it will be wise in every case of epilepsy to inquire into any possible connection with syphilis and to make a Wassermann test; for, in cases in which this is positive, favorable therapeutic results may be expected from appropriate anti-syphilitic treatment.

INJECTIONS OF HUMAN SERUM FOR OBSTINATE BLEEDING OF SEPTIC WOUNDS

The injection of solutions of gelatin—notably of the calcium-gelatin of Merck—has been yielding good results, in the last few years, in instances of true hemophilia as well as when the severe septic condition of extensive torn and bruised flesh wounds has resulted in a hemorrhagic diathesis (often aggravated by consequent diarrhea and emaciation), so that the surgeon is confronted by a more or less profuse parenchymatous bleeding whenever the dressing is removed, or even independently of that.

More recently, P. E. Weil (*Zeitbl. f. Inn. Med.*, 1906) introduced the injection of fresh human blood-serum, with the same end in view, and the procedure seems gradually to be gaining adherents. Among these, H. Kronheimer, of the military hospital at Nuernberg (*Muench. Med. Woch.*, 1916, p. 29), reports, in detail, his experience in the case of two soldiers thus suffering from severe, life-endangering traumatic infection and a hemorrhagic diathesis. The serum injections were tried after adrenalin-compresses had failed. Because of the eminently satisfactory result (rapid and lasting), besides the economy and easy execution of this method, the author warmly commends it to the consideration of his colleagues.

Originally all serum employed was of heterogenous nature (horse, sheep, rabbit); but, although for this very reason acting strongly hemostyptically, this biologically alien substance is exceedingly prone to give rise to various disagreeable anaphylactic phenomena. Human serum, on the other hand, being homogenous (species-identical), no side-effects whatever were observed in the author's two cases. Even when one injects as much as 30 mils (Cc.) of human serum, anaphylaxis need not be feared.

How so small amounts of serum, as here named, introduced into the system, can effect such marked results, still remains a puzzle; however, the author concludes by calling attention to the observation of Trembur, who, in one hemophiliac, saw a marked increase of the leukocytes, once up to the number of 17,000, after each injection of serum.

TECHNIC OF SECURING, AND ADMINISTERING, SERUM FOR CHECKING BLEEDING

Doctor Kronheimer, whose experience with serum-therapy is given in the preceding paragraph, describes (*loc. cit.*) his simplified way of procuring the fresh human serum; as well as how to use it.

As a matter of course, the person giving the blood nust be sound and healthy, and, above all, the Wassermann test must definitely have proved freedom from syphilitic taint. The quantity of blood drawn directly into the relatively large test tube, by means of venesection under strictest asepsis, should be approximately four times the quantity of serum to be used; this extra amount, because the yield of serum is small, even when centrifuging immediately, as the blood clots so quickly. Thus, putting the blood, just drawn, upon the centrifuge and whirling uninterruptedly for two hours, only 5 Cc. of serum could be obtained from 20 Cc. However, subsequently the bacteriologist of the hospital, Doctor Rosenthal, devised the following im-

proved method yielding a larger proportion of serum:

The tube containing the blood, closed with a sterile cotton plug, is set away in the refrigerator and allowed to remain one hour. Now, loosen the blood cake from the glass walls, so that it moves freely, by passing around it a sterile platinum wire ending in a noose, then replace the tube for another hour in the ice-chest. When now centrifuged, the proportion of serum obtained will be greater. The supernatant serum is drawn into a hypodermic syringe the needle of which, of course, has been sterilized. No harm, should a little of plasma get into the syringe, provided the injection is to be made subcutaneously.

Concerning the subcutaneous administration, this explanation is offered: The author, entertaining some slight apprehension as to possible thrombosis from the intravenous introduction of the serum, decided to give it subcutaneously, as practiced by some (e. g. Baum). Now, Class fixes the latter dose at twice that of the former; however, unaware of the minute yield of serum, he had at disposal only 2½ mils in his first trial. Nevertheless, the effect turned out so satisfactory (also with his second patient), that he sees no reason for increasing this hypodermic dosage, nor, either, for adopting the more difficult and dangerous intravenous injections. For all that, he would not, in the future, shrink from the latter method if thought desirable.

OBSERVATIONS ON DUODENAL FEEDING

Elsewhere in these pages methods have been described for introducing a tube into the duodenum, with the object either of abstracting a specimen of its contents or of administering a saline purgative direct into the intestine. There is, however, another, most important, use for the procedure in question, namely, the administration of nutriment when the state of the stomach (obstinate and recurrent ulcer, irritability, nervous anorexia) demands exclusion of that organ in the alimentation. Thus, duodenal feeding, if practicable, often might prove a desirable substitute for the rectal method with its very decided drawbacks. This mode of nourishing the patient is now being investigated, one of those reporting upon it being E. Reuss, of the Friedrichshain Hospital at Berlin (*Berlin. Med. Woch.*, 1914, p. 1022.)

Reuss's experience was with 91 patients treated for ulcer of the stomach, and the conditions controlled by tests were, the metabolism of the nitrogen and the absorption of albumin and fat. Milk (1.2 to 2 liters), full-cream (1-2 liter), cane-sugar or Soxhlet's sugar (up to 100 Grams), and sometimes a little wine were the nutrients administered.

In one trial case, under increasing allowance, nitrogen balance was attained with a 1800 to 2000-calories diet. In another instance, with a sufficient diet, balance was not established until part of the milk was supplanted by sugar. At another time, nitrogen accumulation took place when this constituent was raised to 15 Grams by the addition of "riba." [A proprietary albuminoid preparation.—*Ed.*]

The foundation of the duodenal nutrient, in Reuss's hands, always is milk enriched with cream, the practicable limit lying around 2 liters for milk and 3-4 liters for the cream; for forced feeding, the advice being rather to augment the cream and add egg-yolk. Carbohydrate supply is increased by adding from 100 to 200 Grams sugar; while 100 Grams "riba-malt" or 50 Grams of "riba" (equal to 8 Grams of nitrogen) added to the milk causes nitrogen accumulation. Sometimes a little (purest) alcohol or sweet may be incorporated; but as little as 3 Grams of alcohol in cream, instilled in the course of three hours, has produced slight intoxication in men. Vegetables may be given in the form of Friedenthal's powdered garden-vegetables. [It really is to be hoped that these extremely valuable culinary preparations soon will be imported or else manufactured by some enterprising firm in this country.—*Ed.*] When forced nutrition is not especially aimed at, a more normal diet may be approached by the incorporation of meat-juice, bouillon, cacao, and other foods.

One observation in duodenal feeding is of importance; namely: when the food supplied approaches the normal ratio, intestinal disturbances are evidenced, as expressed in borborygmus and slight abdominal pain; which, however, can be controlled by means of hot applications and anodynes, such as opium or belladonna—or their alkaloids—in minute dosage. The stools are rather hard, but the albumoses added to the rations tend to soften them; occasionally purgatives may have to be introduced through the duodenal tube.

The transition to natural feeding is effected, according to the author, by instilling into the duodenum, over a period of one or one and one-half hours, the duodenal nutrient, and after that (never before, because of the pyloric reflex!) let the patient slowly ingest additional liquid or pultaceous food. The duo-

denal feeding may, if desired, be stopped abruptly; but in that case the amount of food taken into the stomach at first must be small and only gradually increased, approaching normal only in about ten days.

Indicated remedies may be incorporated with the duodenal feedings. Under this regimen, the local treatment of the stomach (with silver nitrate, for example) is greatly favored, owing to the more intimate contact of the medicaments with the lesions.

PHYSIOLOGIC ACTION OF EMETINE

In order to determine the pharmacologic properties of emetine, E. P. Pick and R. Wasicky (*Arch. f. Exp. Path.*, 1916, p. 147) observed the effect of the self-prepared alkaloid upon the vascular system and heart of frogs, the vessels, heart and lung of mammals, the musculature of stomach and intestines of mammals and frogs, and the uterus of cavies.

The authors arrived at the following results: Emetine exerts a paralyzing effect upon all organs having unstriated muscles, but small doses increase the peristalsis of the batrachian pylorus and of the mammalian gut. The initial point of attack is the unstriated muscles themselves.

From this paralyzing influence upon the musculature of the bronchi, the authors derive the justification of the empiric use of ipecac as an expectorant. However, in view of the action of the alkaloid upon the heart and arteries, caution is enjoined in its rapidly extending use as an amebicide—in dysentry, pyorrhea, and the numerous other conditions.

ARTIFICIAL GASTRIC JUICE FOR TREATING GANGRENOUS AND PHLEGMONOUS WOUNDS

Adopting the suggestion made by Freund, to destroy the necrotic tissue of poorly healing wounds by means of artificial gastric juice, Doctor Funke tried this scheme at the Rudolfstiftung Hospital at Wien (*Med. Klin.*, 1915), particularly in cases of gangrene and thickly coated wounds. The lukewarm solution was variously employed, in the form of baths, embrocations, and continuous irrigations. In the case of embrocations, the compresses must be renewed every two hours, in order to maintain the predominance of free acid.

The result far exceeded that following any other treatment tried. Despite the rapid disintegration of the dead tissue, no bleeding ever occurred, while the only disagreeable side-effect observed was severe pain in a single instance, so that its use had to be desisted from. However, the application is contraindicated in the acute stage of phlegmons.

The peptic solution has the following composition: 2-percent hydrochloric acid, Gm. 1000; pepsin, opt., Gm. 20 to Gm. 50; 1-percent alcoholic solution of dimethylamidoazolbenzol, gtt. 5. This liquid must not be warmed to more than 50°C., and is no longer of good quality after being kept for more than two days. The addition of the coloring reagent merely serves to indicate the presence, at any time, of free hydrochloric acid.

FLY-POISON AND ANTIMOSQUITO-BITE

With the coming on of the summer season, it may not be amiss to revamp formulas for exterminating noxious insects and for counteracting their bite. Here are two, published by the German imperial sanitary commission:

Poison for Flies and Mosquitoes: Stir 1 teaspoonful of formalin into 1-2 pint of beer or milk [best, colored], pour it into shallow saucers, and place them about the room, but out of the way of children and pet animals. The formula is not a new one.

For Mosquito Bites: Dissolve 1-10 Gram of menthol and 3 Grams of formalin in 7 Grams of alcohol, and apply a little to bite.

THYMOLIZED ANIMAL-CHARCOAL FOR PERSISTENT TYPHUS-GERMS

Satisfactory results in the eradication of persistent typhus-bacilli have been attained by A. Géronne and W. Lenz (*Berlin. Klin. Woch.*) by means of a course of thymol and animal-charcoal. ("Kohle" is the term used by the authors; but, since this signifies common coal, we assume that they really mean, not even willow charcoal, but as rendered.) The treatment consists in prescribing 1 Gram (15 grains) of animal-charcoal half an hour before each (of the three) daily meals and 1 Gram of thymol half an hour after the meals; the former stirred in some water, the latter taken in capsules. This medication is continued until the patient's excreta are entirely free from the offending bacteria. The fact was established that in the case of cured patients, but who even six or seven weeks after complete freedom from febrile condition, continued to pass bacilli, the latter disappeared completely within from eight to fourteen days and still were found absent ten weeks afterward. No untoward phenomena were observed.

Miscellaneous Articles

Intravenous Administration of Quinine in Malaria and Hemoglobinuric Fever

ALTHOUGH for many years quinine has been the most effective remedy in the treatment of malaria, its administration by mouth is attended by so many disagreeable features that it has been desirable to discover some less objectionable method for administering it.

Intramuscular injections of quinine not only are extremely painful and very prone to cause abscesses, but the method itself at best is slow and uncertain. Consequently, attempts were made to inject a quinine-solution intravenously, 10 or 15 grains of a soluble salt of the alkaloid being dissolved in about 250 mils (Cc.) of sterile physiological salt solution. However, this method also proved objectionable, for the reason that collapse, shock, and other unpleasant, even alarming symptoms often have been observed in patients debilitated from long continued malarial attacks.

More recently, it has been suggested to inject the quinine in concentrated solutions and, consequently, in less volume. This method is advocated by Surgeon A. D. McLean, of the United States Navy, in a recent communication to *The United States Naval Bulletin* for April. This author reports upon his experiences in about thirty cases of malaria in United States marines stationed at Cape Haitien, Haiti, for the treatment of whom the hospital-ship Solace had been ordered to proceed there.

Very little has been written in favor of the intravenous method of giving quinine, while not a few writers caution against the danger of its causing hemolysis. In the case of the patients treated by McLean, careful daily urine examinations were made, but, if any hemolysis resulted, it was so slight that the liver amply cared for it, since no indications of it appeared in the urine.

Some of McLean's cases were severe infections of many months' standing, so that the patients were very anemic, and cachectic in appearance, and it was thought a solution of quinine into the vein might cause shock or collapse. However, this did not occur.

Systematic blood examinations were made at set intervals, but at no time was there the slightest indication of damage to the red blood-cells; instead, the erythrocyte count always showed an early increase after very few injections. One patient, showed, when he arrived on board of the Solace, a red-cell count of 3,700,000 and 70 percent hemoglobin, owing to the previous duration and severity of his infection. He received daily intravenous quinine injections for over one month, although the temperature remained normal after the third day, and at the termination of treatment his red-cell count was 5,200,000 with hemoglobin percentage virtually normal. This showing rationally excludes that hemolysis occurred.

Dosage and Preparation.—When giving quinine intravenously, either a concentrated or a dilute solution may be used. The concentrated solution was the one employed by McLean, and is considered by far the best. This concentrated solution contains 1 grain of soluble quinine (preferably the chlorhydrosulphate) in each mil (Cc.) and the dose is, 10 mils, or 10 grains of quinine. To prepare the solution, use sterile water and make up the amount desired, allowing for any loss occasioned in removing the air bubbles in loading the syringe. Filter; then place in the autoclave for twenty minutes at 15 pounds pressure, or one may use any sterilizing method available. When cool, the solution is ready for use. It must be freshly prepared each day.

Method of Introduction.—When ready, paint the forearm with iodine wherever a suitable vein is present; place a rubber tourniquet around the arm; when the vein is sufficiently distended, introduce the needle and when the blood flows freely through the needle connect the syringe, which has previously been loaded, then release the tourniquet and gradually inject the solution. An ordinary 10- or 20-

mil Record-syringe with a suitable needle (a long one of small caliber being preferable) gives the best satisfaction. It is needless to state that sterile gloves must be worn and aseptic technic adhered to when making intravenous injections.

Immediate Effect.—Most patients, after being injected, first feel a slight burning sensation in the throat, this being rapidly followed by some coughing and a hot sensation in the lungs which quickly pervades part of the body, simulating the sensation of having a fever. Quickly following this, they feel a bit dizzy and occasionally have a very mild transient syncopal attack, which, however, rapidly disappears and leaves them somewhat dizzy for about five m nutes. Then they will get up and be about and no longer experience any ill effects from the treatment. The pulse becomes slightly accelerated and remains so until the medication is discontinued. Very seldom do these injections induce nausea, but, if so, it is only during the first two or three treatments in an acute case with considerable fever, where there already is present a little nausea, to begin with. Rarely does a patient notice any headache or buzzing in the ears, but, if so, it is very mild and of short duration. The convalescent patient always came to the ward dressing-room for his daily injections, which were given as he sat in a chair; after which he had to lie down in a bunk for ten minutes before going about the ship.

Most patients received two injections daily—at 9 a. m. and 7 p. m.—for four or five days, then one per day for ten days more, after which treatment was discontinued; for, by that time it was considered that the patient's system was entirely free from the malarial organisms. No other treatment was employed in these cases, except prescribing an appetizer, to take before meals, and an iron and arsenic tonic, for taking after meals; besides paying attention to the various channels of elimination.

As quinine was not given by mouth, the appetite quickly returned, convalescents made rapid progress, and the gain in weight in some cases was remarkable. The majority of these patients remained on board the ship for about two months before being returned to duty, and none of them had a recurrence of malaria after the treatment—which took about ten or fifteen days—was discontinued.

Doctor McLean believes that probably 7, 8 or 9 injections are sufficient to free the patient's system of the malaria-germ; still, in rder to be on the safe side and, as the administration is most simple and causes little if any discomfort, he gave from 12 to 20 injections, according to the duration and the type of malarial infection.

All told, about 400 of these intravenous quinine-injections were given, and never were there any unpleasant results, such as painful or swollen arms or marked systemic reactions. Extreme care was always taken never to inject any of the solution outside the vein, but to make a second puncture if necessary, for, the solution is very irritating when deposited into the tissues.

The results were beautiful. There was no temperature after the third day of treatment, and it was interesting to observe how rapidly, after months of recurring attacks that had greatly debilitated and depressed them, some patients took a new lease on life and regained their wonted vigor and tone. The saving of suffering and discomfort to the patients was marked, for, two days' treatment practically aborted the severest cases.

From the results thus obtained by the author, he is inclined to feel that the administration of concentrated solutions of quinine intravenously is as marked an advance in the treatment of malaria as is salvarsan in many cases of syphilis, and the results are fully as spectacular.

This method is considered far superior to using the dilute solution of 200 or 250 mils (Cc.), for the following reasons: Mildness of reaction; ease of preparing and sterilizing the solution, owing to its small volume; simplicity and celerity of administration, as shown by the fact that on board the Solace intravenous injections often were given as rapidly as ten inside of twenty minutes, that is, about two minutes for each convalescent, although in the case of the bed-patients it took slightly longer. Moreover, it is far safer than the intravenous injection of dilute solutions.

The results obtained in these experiments cause Doctor McLean to conclude that the intravenous administration of concentrated solution of quinine, not only is a safe method, but is by far the quickest and surest way of eliminating the malarial organisms from the system.

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[Doctor McLean's communication is of particular interest for the reason that he advocates the intravenous use of a concentrated solution of quinine, in contradistinction to other authors who prefer greatly diluted solutions of the remedy. In connection with this article, the next one, referring to the work of Surgeon W. H.

Michael is pertinent and also the leading article, translated from the French, by Drs. Carnot and de Kerdrel.—ED.]

THE USE OF QUININE IN MALARIA

Assistant Surgeon W. H. Michael, of the United States Navy, referring to the numerous journal articles on the use of salvarsan and other arsenicals in malaria, points out (*U. S. Naval Med. Bull.*, April) that from these articles the conclusion might be drawn that quinine is out of date. Nevertheless, he holds that the arsenical treatment of malaria still is in the experimental stage and that ordinarily the proper treatment of malaria is that with quinine.

Undoubtedly, much of the dissatisfaction that has been attributed to quinine is due to ineffective methods of administration; for, Doctor Michael declares that quinine will cure the symptoms of malaria if the patient remains alive five days. In a rather large experience of benign tertian malaria treated with quinine, none of the victims ever had more than one severe attack of fever, and in no case of malignant tertian did the temperature fail to reach normal by the end of the week.

It is to be considered that quinine is a specific remedy for malaria, for the reason that it kills the malarial parasites which the patient harbors especially in the blood stream. The problem, therefore, is, to change the body and especially the blood stream into a solution of quinine sufficiently concentrated to kill the parasite without likewise killing the body. In the failure to carry out this idea or in employing quinine-solution below the strength lethal to the parasite, lies one of the causes of failure in the treatment of malaria.

On this basis, the daily administration of a small dose of quinine (5 to 10 grains), as a prophylactic is considered to be unjustifiable; for the reason that quinine in doses that are sublethal for the plasmodium may simply delay the development of the disease and give the parasite an opportunity to become adapted to the unfavorable medium, in other words, to become quinine-fast.

The author has seen some very satisfactory results from a routine of treatment under which 20 grains of quinine sulphate is administered as soon as the diagnosis is made, followed by 3 grains of calomel and, four or six hours afterward, by an ounce of magnesium sulphate. The quinine is continued in 15-grain doses, three times daily, until the temperature remains normal for twenty-four hours. The dose is then reduced to 10 grains three times a day, and kept up through a three weeks' period of normal temperature, when the remedy is stopped. The author believes it unwise to reduce the dose gradually.

If the administration of quinine by mouth is impracticable for any reason, Doctor Michael advises resort to the intravenous method, for which, however, he favors considerable dilution, he dissolving 15 grains of the chlorhydrosulphate of quinine in 750 mils (Cc.) of physiologic salt solution.

The following alternative methods of treatment may be practiced, giving preference in the order named:

(1) Injecting very slowly intravenously as little as 10 mils of sterile water (more, if possible) containing 8 grains of the chlorhydrosulphate of quinine, and repeating this after an hour. (2) Injecting intramuscularly 20 to 25 grains of the same salt, followed by massage for ten minutes of the part injected. (3) The administration of 60 grains of the quinine salt in 1 quart of normal saline solution by rectum. Either of these treatments may be repeated at intervals of four hours or until the ordinary treatment can be resumed.

If either the first or second treatment is employed, it should be supplemented by a rectal injection of 1 quart of physiological salt solution.

It is worthy of mention here, that any form of hydrotherapy applicable to other fevers is adapted for malarial fever. The administration of large amounts of liquid by mouth, vein or rectum, according to opportunity, is especially necessary in severe cases, as this is considered to aid in keeping the kidneys open, in controlling albuminuria, and in preventing that most serious complication, hematuria, or blackwater-fever. The patient should remain in bed throughout the febrile period of treatment, both because the treatment is rendered more effective and because it is considered that relapse is neither so frequent nor so persistent in patients so treated. The bowels should be regulated by an occasional laxative saline. The diet is regulated by the fever itself, although the patient should indulge no unnatural appetite. All other, treatment as to stimulation, and so on, is symptomatic.

In those occasional patients that manifest an idiosyncrasy against quinine, the author found the procedure described below applicable, as being in line with the theory of

anaphylaxis and as having given satisfaction in one case.

A small dose of quinine was given by mouth, which evoked the anaphylactic reaction. After the symptoms had passed their height, which was in about an hour, an intramuscular injection of 25 grains of the remedy was given, when no further anaphylactic effects followed. In fact, the patient thought that the hypodermic dose was something intended to stop his discomfort. In cases of this kind, intravenous injection is considered dangerous, because of the immediate absorption taking place. It is useless to add, that the individual possessed of an idiosyncrasy against quinine should not remain in a malarious district or, if that be unavoidable, he should look to the most rigid self-protection against infection.

THERAPEUTIC ACTION OF THE SPONGE-BATH

Do physicians fully realize the importance of the sponge-bath properly employed? First of all, we understand that the word "therapeutic" pertains to the science concerned with the application of remedies and the treatment of disease. In this paper we will consider the application of water and its physiological effects upon the human body, remembering, too, that we are dealing with something that, when applied at one extreme of temperature, may cause death of tissue, as in scalds; while, used at the other extreme, gangrene may result.

Water may be applied to the body either in the form of liquid, ice or vapor, and, not only does it produce ordinary cleanliness, but it is used to supply or to abstract heat and also for toning the system. A sponge-bath may act as either a stimulant or a sedative.

The primary effect both of hot and of cold water on the body is stimulating; however, in its secondary effect, the prolonged hot sponge-bath proves, firstly, sedative, secondly, depressant, and, thirdly, weakening, while the secondary effect of cold sponging is, to invigorate. Then, too, cold water may produce depression, owing to exhaustion of the nerve-centers, from too prolonged stimulation.

Whenever cold or warm water is applied to the skin, contraction of all the tissues occurs in the area involved. Cold sponging also increases the number of red cells and leukocytes in the blood.

Warm sponging slightly increases the number of the red cells and decreases the leukocytes in the parts not exposed to the water. Therefore, we might conclude that the cells are stimulated to greater activity, thus aiding phagocytosis in toxic conditions; also, if sponge-baths are continued intelligently, an actual increase of red blood-cells and hemoglobin may be observed, and, thus, will prove beneficial in anemia and other conditions.

Sponge-baths of low temperature and of a certain duration will cause a rise of blood pressure, whereas hot sponging primarily causes heightened blood pressure, followed by relaxation of the blood-vessels and consequent fall of the blood pressure. This may be observed during the application of hot water continued for any length of time, when faintness may occur, due to the anemic condition of the brain, because of the extra amount of blood required in the circulation of the portion of the body to which the heat is applied.

Direct cold applications to the head cause an increased blood supply to the particular area and thus overcome faintness.

Cold sponge-baths of sufficiently low temperature and duration, applied by friction, are especially valuable for reducing elevated temperature; blood flows to the surface in its completion of the blood-cycle, it is constantly cooled by the application of cold water. This primary contraction is followed by a dilation of the blood-vessels and the response of the efferent nerves to the call made by the afferent nerves for more heat. Thus, we may perceive that the general circulation is increased.

Following the response of the efferent nerves to the afferent nerves, comes the contraction of the interior muscles, vessels, et cetera, acting as a tonic to the heart and causing a hyperemia in the particular area. I might say, too, that the muscular fibers in the skin play a very important part, by acting as a check to the overdilatation of the blood-vessels, in that way maintaining a higher blood pressure.

So far, we have the primary effect of either hot- or cold-water sponge-baths, providing that the effects vary with the temperature of water as follows:

Cold spongings cause the respiration gradually to become deeper.

Hot spongings produce rapid, shallow breathing. Thus, we may observe for ourselves the result of the increased action produced on the heart by the prolonged application of hot water.

Sponge-baths also are beneficial for the metabolism and the building up of the body-tissue.

The properly given cold-water sponge-bath aids in the oxidation of the carbohydrates, while the warm sponge-bath promotes the oxidation of the nitrogenous elements; the degree of oxidation depending largely upon the duration and temperature of the application.

It is well to remember that cold water rarely is borne well without at the same time applying friction.

Therefore, the physiological effects of a properly given sponge-bath of the correct temperature and the desired friction may be summed up as follows: (1) increased vitality; (2) increased activity of the nerve-centers; (3) increased muscular tone; (4) increased activity of the kidneys, skin, and liver; (5) more oxygen inhaled, due to increased respiration; (6) increased blood pressure; (7) stronger, slower pulse; (8) tonic effect upon the heart; (9) increase of the blood-corpuscles, especially the white ones,—thus demonstrating the legitimate use of baths for aiding phagocytosis.

Details of the Technic. Having discussed the theoretical effects of sponge-baths, we now turn our attention to the technical phase, and will take for our illustration the antipyretic application. Remembering that physicians vary in their opinions as to the procedure and temperature of water to be used, I shall describe the bath of the temperature most commonly employed for reducing fever-temperature.

Various methods for giving antifebrile sponge-baths are in vogue among physicians, any of which may prove equally efficient and serve several purposes, provided the essential things are included. First of all, the person administering the bath should possess a calm manner. The strokes with the wet sponge must be long and soothing, and executed with considerable pressure. If friction is desired (this depending entirely on the physician's orders), use water of correct temperature, tested accurately with a thermometer, and continue the bath for the specified length of time. Last, but equally essential, is the accurate adherence, in detail, to all the ordinary manipulations prescribed.

We shall need the following articles: one rubber sheet, one bath-towel, two cotton sheets, one small towel for the abdomen, one hot-water-bag and cover, one ice-cap, one foot-tub half-ful with water of 80° to 90° F., one bath-thermometer.

Having everything in readiness, we first apply the ice-cap to the patient's head; and the hot-water-bag to his feet, then remove the top covers and substitute a cotton sheet; then pass the rubber sheet, covered with a cotton sheet, under the patient and lastly cover the pubic region with a small towel. Beginning with the sponging now, do so with the same stroke as for the ordinary cleansing, being sure to have plenty of water in the washcloth. Rinse the washcloth frequently and gradually cool the water by the addition of ice, thus obviating the risk of wetting the mattress because of, possibly, a defective rubber sheet. This should be continued for twenty to thirty minutes, and, if carefully done, the reduction in the temperature may be noted in half an hour following the termination of the sponging.

Things to remember in giving the sponge-bath are as follows: Keep the patient's arms away from his side; dip the cloth often while sponging in the axillas; do not allow the patient to see the ice used in the water; remember that the evaporation of the water cools the skin more quickly.

This procedure may be followed by an alcohol rub. If we have followed our instructions carefully, we not only have reduced the patient's temperature, but definitely affected each function referred to in our summary above.

Have we not all observed at some time or other the sedative effect produced by a carefully applied sponge-bath to a previously restless, nervous, and uncomfortable patient? If so, we even may agree that a sponge-bath may prove possibly more beneficial than many of the socalled sleeping-powders, while surely being less deleterious in its ultimate effects.

MARY LARTER, R. N.

Fall River, Mass.

HYPODERMIC TREATMENT OF MALARIA

We are located so high and dry in this part of the country that we have little standing water and, therefore, little malaria. Possibly eighteen or twenty years ago, we had a wet July; chills were thicker than in the Mississippi swamps, and I was out on duty twenty-four hours a day. Everybody got well, but just what I did or how I treated the trouble I have now forgotten. Doubtless, I gave them a good calomel purge and plenty of quinine, by way of the mouth.

Today, I should prescribe a good calomel purge, but quinine and urea hydrochloride administered hypodermically. So often there is a coagulated condition of the stomach and bowels and, therefore, little or no absorption of medicine from these organs; consequently,

whenever quinine has failed to prevent a chill, usually the failure of the stomach to take up the quinine has been the reason.

In the severer forms of malaria, it is absolutely necessary to secure a quick and certain effect, and there is none better than hypodermic quinine and urea hydrochloride—it hits the spot at once.

By calomel purge, I mean a real calomel purge—that is, from 10 to 100 grains, as the urgency of the case demands—and then hypodermic quinine.

B. F. TERRY.

Rising Star, Tex.

TREATMENT OF MALARIA IN THE SOUTH

In the treatment of malaria, the indications are much the same as for the treatment for any other acute febrile condition; namely: to cleanse the alimentary tract, flush the kidneys and skin, stimulate the liver, and push quinine to physiological effect. But, here is where the difference comes. The liver often is very torpid, at times congested or even swollen and much enlarged; while the kidneys frequently are congested to the stage of active escape of blood into the urine —hematuria. For this reason many times heroic doses are necessary in order to get results.

In the South, we meet with cases of more or less pernicious forms, and these vary from threatened congestion to congestion of many parts of the body, the most common being the brain and kidneys, less often the stomach and intestines. We get the better results from the use of calomel in relatively large amounts given at one dose—3 to 8 grains in ordinary cases, and in the pernicious form running up to 20, 30, and even up to 40 and 50 grains as a dose. These larger doses should be followed, by laxative salines, at shorter intervals, say, of two or three hours. Often it is necessary to inject, say, 1-4 grain of morphine fifteen or twenty minutes before giving the dose of calomel, in order to quiet the stomach for retention of the drug. If this does not allay the nausea, then place cloths over the pit of the stomach wrung out of hot water, and a cold wet cloth around the neck.

If the temperature is high, sponge the body freely with tepid water; cold water may be dangerous, if there is congestion or if it is at all threatened. Follow this with the defervescent compound, a dose every fifteen or twenty minutes, for four or five doses, or give a small dose (gr. 1-8) of pilocarpine, repeating in one hour if not yet sweating. If the pulse is bad, nitroglycerin, 1-100 grain hypodermically gives best results. If the pulse is weak, add strychnine. To flush the kidneys give citrate or acetate of potassium, 5 to 10 grains of either (or less) every three hours, in plenty of water.

If the first dose of the laxative saline does not act promptly, after the calomel, say, in three hours, then give a second dose. Should this not prove effective in two hours, administer an enema of salt solution, to start the bowels moving. As the stomach frequently is irritable and will not retain epsom-salt or cream of tartar, one may try an effervescent saline laxative or effervescent combination of epsom salt, lithium carbonate and colchicine; however, I find that citrate of magnesia, one bottle divided into two or three doses and thus giving a half or a third bottle every hour, often is retained the best.

As soon as the temperature is reduced, the bowels move freely, and the kidneys are working well, or, in other words, as soon as the danger of congestion is removed (if any was present), then give quinine bisulphate, 5 grains every half hour or hour, for three or four doses or until the ears begin to ring and the patient is getting a little deaf. After six or eight hours, give 10 grains more, in two doses an hour apart. After twelve hours, give 15 grains more, in three doses an hour apart. Thereafter, 5 or 10 grains night and morning for three days. In a malarial district, give 5 grains night and morning on the sixth and seventh days of a week for three weeks. The bisulphate is more soluble than the sulphate of quinine, and gives better results.

If the patient is comatose or if the stomach is too irritable to retain quinine by mouth, give from 3 to 6 grains of quinine and urea hydrochloride hypodermically, and repeat as indicated, until the stomach is able to retain the quinine. The quinine-urea comes in tablets and is quite soluble. Be careful about the injecting, for it will cause slight local inflammation at the site of injection and often is followed by an abscess.

Warburg's tincture, 1 dram three times a day, and an iron tonic containing arsenic and strychnine, taken for a week or two following cessation of the fever, gives excellent results.

Cacodylate of sodium may be used, with good results, in this stage.

In this connection, and as a digression, let me state that this drug has given us excellent

service in the treatment of pellagra and also in asthma. Given in 3- to 5-grain doses two or three times a week, hypodermically, it works wonders in these two conditions.

In the hemorrhagic form of malaria (hematuria), emetine in 1-2-grain doses hypodermically, to be repeated in from four to six hours, often is a lifesaver. Here, we use very large doses of calomel in these cases. Quinine is given the same as usually as soon as congestion and hemorrhage are relieved.

Many sufferers are left with a torpid liver, as a result of malaria. Then, podophyllin, sodium phosphate, and such like are useful remedies.

The treatment here outlined usually acts like oil on stormy waters.

GEORGE H. WALTER.

Orangeburg, S. C.

PERDUE, AND THE ETIOLOGY OF CANCER: A CRITICISM

In the March number of CLINICAL MEDICINE, on page 180, you comment upon the work of Dr. L. A. Merriam, of Omaha, with especial reference to his findings on the etiology of cancer; and you state that Doctor Merriam's is the first attempt you have seen within recent years to "put the shoe on the other foot."

With no desire to claim precedence, but solely for the purpose of enforcing the truth of Doctor Merriam's statements, I would respectfully call your attention to the July, 1915, issue of THE AMERICAN JOURNAL OF CLINICAL MEDICINE, in which I contributed an article entitled "The Basis of Cancer-Therapy." In *The Medical Council* for July 1914, I specifically wrote that cancer is caused by the defective elimination and retention of organic waste. Since that time, I have followed these reports by many others printed in the medical press all over the United States.

In view of the general attitude of THE AMERICAN JOURNAL OF CLINICAL MEDICINE, your comments are very disappointing and seem to indicate that scientific discussions are directed to the establishment of theories and to the precedence of discoveries. Neither of these are the true end or purpose of medical research. Doctor Merriam does not claim to be suffering from cancer, neither do I. The end and purpose of such reasearch is, the prevention and care of human cancer.

The primary cause of cancer is an auto-intoxication, and this can never be relieved by means of surgery. The location of the tumor is determined by local irritation. This irritation breaks trophic control and causes lawless cellular development in the field of autointoxication.

While I am not a medical editor, I trust you will pardon the assumption that it is the function of the medical press to publish all scientific truths. The sooner these scientific truths are well known, the better for the people who suffer from cancer. Investigators, research-men, institutions and laboratories do not count. It is the good common people of the United States and of the world who suffer from and die from cancer. Their good is the only desideratum.

E. M. PERDUE.

Kansas City, Mo.

MEDICAL REFORMS, AND THE REFORMERS

Many excellent men do I know in the medical profession:

Many of grand character and sterling principles;

Men who cure the sick and relieve human misery;

Men who labor for the public good and try to prevent disease.

These men say little for publication;

They never play for the grand-stand;

They do not pretend to have made good discoveries;

They never lend their medical journals to the lay reader;

Nor do they advertise their knowledge by teaching their patrons how to pronounce such words as phytolacca, belladonna, and hexamethylenamine;

They aim to be up with the times and their profession;

They interest themselves in their patients, their journals, and their books;

Most of their patients get well.

Such doctors have their share of the business; They help the public by attending to their business.

But, there are a few who hurt the honest members of this great lifesaving brigade by their love of the limelight. This small minority are fascinated by the glamor of publicity; and they lack the wit to see that, instead of making bright and shining stars of themselves, they are misrepresenting the noble profesion in the ranks of which they are permitted to stand.

When I hear a man addressing a lay audience to the discredit of the many honest and capable physicians of America, I know

that I am listening to a man who has an axe to grind or who is unable to build up a practice.

And now we are facing the result of such folly. It has been folly to grant such men space in which to prejudice our patients against us.

If what these men say were true, it would be very mortifying. But, it is not true. They diagnose no more cases correctly than does the average country doctor. They sign more death-certificates than do some of their modest brothers. They do no more prevent the spread of contagious and infectious diseases than do the regular everyday doctors. They have been telling the "dear public" that there should be more state supervision of medicine; and they, being the fathers of the bills proposed, think that they ought to be made the heads of a lot of commissions at about $10,000 per.

Possibly the public cannot see through the deal.

Can the physicians see through it?

Can they see what brought it about?

A six weeks' health course will provide a fat place for the lazy son or the shiftless nephew.

The doctors will be favored according to their political pull. Merit in curing diseases will not be recognized. Neither the people nor the physician will have any appeal.

The Socialists suggest a better system, and it is free from graft.

Considering the fact that nine-tenths of the health reforms of the past twenty years have been suggested by the physicians of America, is it wise to turn the public welfare over to a group of lay politicians?

It is time for the physicians to call in some of their self-appointed publicity agents.

UNCLE DICK.

——, Michigan.

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["Uncle Dick" pronounces some home-truths that might well be heeded. Unfortunately, it is a fact that those who scold most and cry out the loudest against real or imagined abuses are not always the best or the most competent men; often they are political jobbers who are seeking their own advantage. Abuses there are, in plenty; without a doubt. Likewise, there is room for improvement in many things, and physicians, as a class, are accustomed too much—for their own good—to mind their own business and do their work as well as they can; they do not take the time to look into the justice of proposed changes. In consequence, they are liable to be taken unawares and to be led into the deep waters of miscalled reforms. Let physicians pay attention to the movement of health insurance, unless they wish to be relegated to mere subordinate "jobs", at the mercy of inspectors and other officers who are ignorant of the work that they presume to regulate and supervise. "Uncle Dick's" caution is timely.—ED.]

DOCTOR WAUGH IN TEXAS

Doctor Waugh is forming a club of doctors at Palacios, Texas, each to have five acres planted with fruit-trees, with social and co-operative features.

A STUDY OF WAR-TIME EMOTIONS

In this, the third year after the end of the "old" world, I am back in London again. I have recently completed a tour around the world. These are lively times to be out and of special interest to one who is studying the physiology of moods and emotions.

Aboard ships on the seas and ashore in many lands, I have studied my fellow men in their times of trial. Some had just lost their fortunes; others, through the fortunes of war, had just made their pile or were doing so. Some had just lost their dear ones; others believed theirs lost, but could not find out for sure; worst of all, some had lost faith in man, in the world, and in any good power ruling the universe.

I studied a young Chinaman who had been saved by the bluff of an American friend an hour before the time set for his beheading by an official of Yuan Shai Kai, who himself has since conveniently died. I studied alarmed passengers at sea under dread of submarines. I was able to study emotions in the Japanese, who give expression to them least of all people. In Senegambia, I compared the emotional states of the natives with those of negroes in civilization.

Yet, nowhere have I myself been so stirred as right here in London, when I was awakened at midnight in the midst of a dream of a storm at sea. The source of the dream and the awakening was the defiant gloating roar that came from several million throats as the city exulted at the sight of a monster airship set on fire by a tiny aeroplane—an elephant destroyed by a hornet. The faces of the watchers were all toward the hill near London where I was living, as they looked toward the duel in the air several miles beyond. Those

roars of triumph came in waves like the waves of the sea, and will remain with me longer than the sight of the flames bursting from one end of the beautiful airship, which looked like a golden pencil-case smoothly moving through the sky and plunging headlong, exploding in a mass of flames.

I had been in London some months without seeing any effect of Zeppelin raids. I went to a certain quarter where it was said the whole street of houses had been blown down. I found only three houses down; the rumor about the whole street applied only to the window-panes. I was able to make a careful study of only one person dazed by the explosion.

Of all the strains upon the bodies and souls of men in this war, shell-shock alone excepted, the nerves of the airmen suffer most. For those airmen who remain too long at the front, the glorious feeling of elation may give way to habitual cynicism and gloom.

The English people are taking the war in their usual quiet, self-contained way. Some might find it easier for themselves if they gave way more to their feelings. I talked with a man who had cheerfully given two sons as cannon-fodder and has three others in the trenches. The only effect I could detect on him was, that the repression of grief had aroused an unreasoning hatred of certain neutral nations who made money by the war and did not "come in." The soldiers, whether wounded or unwounded, whether on streets, trams or trains, are all cheerful and uncomplaining.

The American Hospital located just around the corner is doing a noble work. The Royal Army Medical Corps is doing all that men can do No conscription or compulsion was needed for the medical profession. They organized themselves and offered their services. Of course, no profession is faultless, and I have heard some complaint about several doctors who certified fit men as unfit, in order to enable them to escape combatants' service.

WALTER M. COLEMAN.

Highgate, London.

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[This is a personal letter to the Editor, which we print because of its special interest in these anxious days when war has become our own next step. Professor Coleman is a teacher on physiology. Also, he is the son of our dear old friend Doctor Coleman, of Texas, who died several years ago, and whose writings on alkaloidal therapy (and on calcium sulphide) will be remembered by all our readers.—ED.]

MALARIA CURED WITH ORGANIC ARSENIC

Having had some experience with the modern treatment of malaria, I would like to recount the history of two cases of recurrent tertian malaria treated with salvarsan and neosalvarsan.

Case 1. The patient, a draftsman, aged 24, employed near the water front in New York City, first had malaria six years ago, contracted while summering at Croton on the Hudson, a spot more or less notorious for its abounding marshes. He has never been free of chills and fever since then, paroxysms leaving him for a few months and then recurring, necessitating his absence from business for a week. Under the advice of a physician, he had taken "quinine pills" on and off during all these years, and he attributes his present poor digestion to them.

On April 3, 1916, when I first saw this patient, he had a temperature of 104° F., a pulse of 140, and complained of severe headache, ringing in the ears, dizziness, nausea, and impaired vision ("spots before the eyes"). He was underfed and undernourished, almost emaciated; his face bore a hectic flush, his tongue was heavily coated, breath was foul, lips and mouth were dry, and the spleen was markedly enlarged, hard and tender. A blood-smear revealed the presence of the troublesome parasite.

I immediately ordered all medication discontinued, as it was evident that the young man had overdosed himself with quinine, and prescribed some symptomatic measures, as a placebo, since the paroxysm is self-limited and no treatment affects its duration. Whisky, in dram-doses every half hour, was ordered as a supportive measure. After April 5, the patient had another paroxysm.

On April 6, 0.6 Gram of salvarsan, in 250 mils (Cc.) of physiologic salt-solution, was administered intravenously by the gravity method, and no reaction, in the form of chills, vomiting, and so on, followed, only the patient complained of a persistent taste of garlic for a few days.

The following day, the patient entered my office and expressed himself as "feeling like a new man." Six injections were given at weekly intervals. After the fourth injection, the young man had gained 16 pounds. His gastric embarrassment had disappeared, while

he had had no further symptoms of his former ailment since the first injection was given.

After the sixth injection, I prescribed euquinine, 4 grains in capsule form, to be taken after each meal and to be continued for four weeks. I have had occasion to meet this man since then, and he assures me that he has not the slightest sign of his former ailment.

Case 2. A young woman of 26, telephone operator, has had malaria since a short sojourn in New Jersey about three years ago. During the paroxysms, which occurred twice last year, she is compelled to take to bed for about a week or two. Hers is a typical history of chills, fever, and sweat. Her spleen was slightly palpable on deep inspiration. A blood-smear made the diagnosis positive.

On June 6, 1916, she was given 0.9 Gram of neosalvarsan, diluted with 50 mils (Cc.) of sterile water, intravenously. No reaction supervened. Altogether three injections were given at weekly intervals. After the third injection, euquinine was prescribed, as in the previous case. Up to date, the patient has had no malarial symptoms whatever.

Although two cases are not sufficient for forming an opinion on the efficacy of Ehrlich's arsenic preparation in malaria, I am convinced that for the chronic and recurrent forms of this infection, salvarsan (or neosalvarsan) is the remedy above all others.

D. A. GOLDFARB.

Bronx, N. Y.

ERADICATION OF MALARIA

You invite thought and suggestions for thought, based on personal experience and observation about the work of eradicating malaria. Well! at first blush, a potent suggestion looks easy. Malaria is pretty well understood. Look again, make a start and you will find the conditions hedged in with impenetrable fortifications against success.

The recent outbreak of intense malaria in the southern states has aroused the ambition of the government to look into the matter to some extent; and through the Internal Revenue department it is making some effort to get data. This is a start, but a weak one.

To eradicate malaria, the whole face of the earth must be covered with the exception of the polar regions and the mountain-tops.

We have human carriers who are full of malaria but who never in all their lives had any symptom except a sallow skin or maybe a large spleen. I have seen them born and raised in malarious districts in this manner, and boast of never having had a chill, yet, who, to all outward appearances, looked as if they should be in bed shaking right then. What can we do with these folk?

It is also reasonable to think that other animals are malaria-carriers, without, probably, exhibiting any outward symptoms.

It is evident that the plasmodium has found a good medium for culture in the human body; still the human-body medium constitutes only a small percent of all material in the world that makes a good medium for its culture.

Then, the proposition would be, to study all animals that haunt malarious districts, in search of possible culture-media. If it is frogs, work on them; snakes, the same; and so along. Go after them the same as after the mosquito family which would appear to carry the infection from the medium, to inoculate it into more bodies.

When I came to this mine, everybody in No. 3 camp was "chilling," and that camp was getting unpopular. I cured every one in the camp with intravenous injections of quinine and urea hydrochloride, and now they enjoy as much freedom from malaria as people do in any other part of this territory that would not be classed as malarious. Still, some malaria does exist among us. Hence, from that I would deduce the following plan as a starter:

Cure everybody (carriers as well) of malaria, and then fight the mosquito. To do that, it would require an immense amount of work and enough money to fight a German war. I think that civilization has not advanced to such a point as to make the procedure at all possible, still it may be done when we get to thinking more of the human family than we do of live stock and wars.

T. H. STANDLEE.

Lyra, Tex.

UNPATRIOTIC OR IDIOTIC?

Under this heading, *The Chicago Daily News* for April 14 criticizes the attempt of "some small-souled zealot" to carry his anti-tobacco efforts into vital national affairs by having a clause inserted into the Chamberlain army bill, tending to prohibit the use of tobacco by our soldiers. Such a picayune proceeding deserves to be condemned most severely. Our soldiers' lives will be hard enough whether they actually enter the war

or not. Their duties will be onerous and they will give up many present benefits and chances for the sake of serving their country and of serving those who perforce remain at home.

It hardly is fair, in fact, it is damnably unfair to deprive those of the soldiers who are accustomed to tobacco of their solace, simply to satisfy some crank who cannot and will not let the other fellow live his own life, but wishes to dictate it. That sort of procedure is neither dignified nor attractive; nor is it humane. For pity's sake, let the soldiers have just as much liberty of action as under conditions may be given them. They will be under quite sufficient restraint in essential matters.

H. J. ACHARD.

Chicago, Ill.

"AN OLD DOCTOR'S LIFE STORY"

An unfortunate mistake was made on page 287 of CLINICAL MEDICINE for April, the instalment of Doctor Gray's Life Story being said to be "continued from the March issue, page 1003." On consulting the preceding numbers of CLINICAL MEDICINE for 1917, it will be found that it was impossible to print any portion of this interesting autobiography, and the April instalment is continued from the December issue of 1916, page 1003.

QUININE AND ARSENIC HYPODERMICALLY IN MALARIA

I wish to stress the value of hypodermic medication in malaria. I use quinine dihydrochloride and sodium cacodylate both intravenously and intradermically in most cases of malaria as soon as diagnosed. The results come quicker and are more satisfactory. Of course, I also clean out the intestinal tract with calomel, rhubarb, and the laxative salines.

I recall a case of hemoglobinuric fever, seen after a week's illness. This patient had been treated with calomel; then quinine sulphate, 30 grains daily by mouth, and Fowler's solution of arsenic; he had been given up by two physicians, but was cured by intravenous injections of quinine dihydrochloride and sodium cacodylate.

A white woman, thirty-five years of age, had purpura: also nasal, buccal, and intestinal hemorrhages; her urine was of port-wine color. The jaundice was the most profound that I had ever seen. The vomitus contained bile and blood. The patient was in a state of coma. Sodium cacodylate, 15 grains, and quinine dihydrochloride, 30 grains, were given intravenously at once. The next day, the patient showed marked improvement. Thereafter, sodium cacodylate, 7 1-2 grains, and quinine dihydrochloride, 15 grains, were given hypodermatically every day for a week, at the end of which time the patient was able to sit up. Quinine was then administered by mouth and the sodium cacodylate given hypodermatically, in 7 1-2-grain doses, once a week for two months, when the patient was dismissed as cured.

I consider hypodermic medication with quinine and arsenic sure, safe, and quick, in malaria.

LOUIS H. WEBB.

Chapel Hill, N. C.

QUININE INTERNALLY IS BEST FOR MALARIA

Thirty years ago, I honestly believed I knew the last word in regard to malaria and its treatment, for the past fifteen years, however, each succeeding year has tended to erase this conceit, until now I am "almost persuaded" that I know very little, if anything, about it.

When called to a case of malaria, my first step is, thoroughly to clean out the intestinal tract with calomel and podophyllin given in doses sufficient to get results; then, as soon as the temperature is normal, or even before if there is a gradual decline in temperature, I begin with quinine. To an adult, I give from 3 to 5 grains every three hours for four doses, repeating this every day for three or four days. This usually serves to cure the attack.

Forty-five years' experience in a malaria section has convinced me of the fact that, while quinine is nearer a specific in this disease than any other drug of which I know, frequently cases come under our observation in which it will not overcome the disease. I attribute this to one of two things, or perhaps, in some cases, both may be a factor. The first of these is, "idiosyncrasy," some peculiar condition of the patient that renders him resistant to the curative effects of the remedy; the other is, habit. In the South, we often meet with persons who are quinine-fiends, the same as the morphine- or opium-fiends, whose system from long and continued use of the remedy has become so saturated with the drug and is in such a condition that the remedy no longer exerts a curative effect. In these cases, I often get good results

from the use of some of the arsenical preparations, preferably Fowler's solution.

In long-continued cases, when quinine and arsenic have been tried and failed, I have had excellent results from the use of tincture of iodine and carbolic acid (3 drops of the tincture and 1 drop pure carbolic acid), well diluted with water, a dose to be given four times a day. This is not an original prescription, as it can be found in Bartholow's "Practice of Medicine" printed in 1895. Of course, at that time, very little was known of the malaria-germ or the role played by the mosquito in the spread of the disease, or even about microscopic diagnosis. Every case of a periodic form of fever then was looked upon as malaria and treated as such.

My experience has taught me that these old fellows were not very far wrong, as I have seen very many cases where a blood examination showed no malarial parasite and, yet, the patient recovered under a vigorous treatment of calomel and quinine.

Sodium cacodylate is extolled by some. I have never used this remedy in malaria, as I preferred other preparations of arsenic.

In conclusion, I will say that, with few exceptions quinine is *the* remedy. Better results are obtained from the administration of quinine by the mouth, still, in extreme cases, we may be compelled to give it hypodermically.

H. C. Buck.

Friar's Point, Miss.

SEXUAL IMPOTENCE IN MALES AND THE REMEDY

Here is how I treat sexual impotence in males:

Take an olive-pointed rectal electrode, pad with cotton and sew over this a piece of cloth or chamois-skin. Saturate this with a solution consisting of 20 to 30 drops of adrenalin chloride, 1 : 1000, in 1 ounce of water, and introduce it into the rectum for a distance of three or four inches. Now attach to the positive pole of the galvanic battery. Thoroughly wet a large flat electrode (4 by 6 inches) in warm water containing a little salt and place it over the abdomen, just above the pubes, then connect with the negative pole and turn on, gradually, the current of from 10 to 15 milliampere strength. Repeat every other day, each session to last fifteen minutes. The current should not produce disagreeable pain. Do not use sounds, and quit probing the prostate gland.

If no complications exist, such as stricture, granular patches, gleet, or prostatitis of gonorrheal origin, the foregoing procedure will promptly cure the impotency. The tonic properties of the anode, combined with the astringent effect of the adrenalin, relieve the engorged and patulous prostate gland, constringe or close the relaxed ejaculatory ducts and restore the sexual function. Men of sixty or more years of age, who have not had an erection for months, will wake up with vigorous morning-erections after the first treatment. But, do not employ this treatment unless you want to convert the old jade into a new man. I do not say that it would be best for him—damfino.

S. G. Sevier.

Lytton Springs, Tex.

ON THE INTRAVENOUS USE OF SODIUM CACODYLATE

Again organic compounds of arsenic for the treatment of disease have come to the attention of the profession, while the difficulties met in obtaining the patented Ehrlich products—salvarsan and neosalvarsan—have resulted in renewed interest in the value of sodium cacodylate—or, more properly, dimethylarsenate—in the treatment of syphilis and other diseases. Unfortunately, in a great many cases when a vial labeled sodium dimethylarsenate reaches the hands of the practitioner, it is regarded as a substitute for the German salvarsan and used accordingly, with resulting dissatisfaction. The dimethylarsenate, or cacodylate, is not a substitute for salvarsan, and it must be used in a different manner in order to obtain results and avoid disappointment.

Some experimenters have attempted to treat syphilis with the cacodylate alone, but, owing to the fact that they regulated their technic according to the small doses used in the treatment of anemia, pellagra, and the like, with negative results. To obtain satisfactory results, in the treatment of syphilitic infections, with the cacodylate, large doses must be given intravenously and at regular intervals.

For the primary and secondary lesions, it is advisable to precede by forty-eight hours the sodium-cacodylate injection by an intravenous injection of mercuric chloride and repeating the treatments every four to six days.

For the tertiary lesions, the same method should be followed, using the intravenous iodine in place of the mercury. This should be followed as a routine treatment in syphilis,

and the dose of the arsenic compound should be increased until effects are secured.

The mercury is used to prevent spirochete-sensitization, and the iodine for its resolvent action.

These large doses of from 1 to 4 Grams (15 to 60 grains) are splendidly borne by the patients almost without an exception. No alarming reactions occur and no bad results follow its prolonged use. No fatalities have been recorded or any serious reactions reported among the thousands of cases treated.

This is a strong argument in favor of intravenous medication. The best results are obtained by administering an injection every fifth day, a negative Wassermann reaction often being obtained after the sixth injection. The treatment should be continued if a positive reaction is obtained and the test repeated after the twelfth injection. When the negative reaction is obtained, the treatments should be discontinued for sixty days and then another Wassermann test made. The patient should be seen at lengthening intervals for a year and the treatment repeated if the test ever becomes positive again.

Sodium cacodylate is practically nontoxic, as has been proven by the repeated and continued injection of enormous doses in a great many cases.

It is now common knowledge that the claims of the German manufacturers, that a cure of syphilis can be effected by one or two injections of their product are entirely unfounded. Also, that their products fail to cure unless the treatment is combined with mercury and iodine.

The first effects of their treatment often were spectacular and gratifying, but time failed to sustain their claims. The practitioner now realizes these great variances in results, and a negative Wassermann test often is as quickly obtained with cacodylate of sodium as with salvarsan.

A new light is dawning in the treatment of syphilis, that is destined to increase confidence in the possibility of an ultimate cure. Absorbed in the salvarsan-treatment, the medical profession neglected iodine and its solvent action. Many physicians are verifying our early claims about more satisfactory results being secured from the arsenic compounds when used in conjunction with appreciable amounts of iodine. Evidence is now at hand to prove that iodine given intravenously is far more efficacious than when given by the mouth.

We have produced an intravenous solution of iodine representing 0.5 mils (Cc.) of soluble iodine to 5 mils (1 ampule). We believe that the resolvent effect of this solution on the tissue and glands is necessary to liberate the spirochete and thus permit the arsenic compound to come in contact with the organism.

Results from using the iodine with the sodium cacodylate show a marked increase in the efficacy of the arsenic compound as a spirocheticide. Healing of the lesion is accelerated, owing to increased leukocytosis.

In the treatment of pellagra, sodium cacodylate has proved eminently satisfactory in doses of from 0.5 to 1 Gram (8 to 15 grains). A report on 42 cases from one series and 50 cases from another shows most satisfactory results in a wide variety of chronic skin diseases.

In nervous and mental diseases and, in fact, any condition where arsenic might be indicated, this compound has proved itself to possess the curative properties of arsenic, without its toxic effects.

W. N. FOWLER.

Kalamazoo, Mich.

PNEUMONIA—ALCOHOL—SEX MUTILATION—HYSTERIA

I have read with considerable interest several articles in the February number of CLINICAL MEDICINE, and especially the editorial headed "Is there an active treatment for pneumonia?" This question I answer, without hesitancy, with an emphatic "Yes!" Had you asked, "Is there a 'specific' treatment for pneumonia?" my answer would be an unqualified "No!"

Doctor Cohen's scholarly article on bedside directions for the treatment of acute lobar pneumonia not only is interesting, it is great. Nevertheless, I could not help but wonder what brother Cohen would have done if he had been placed in such a position as I once found myself back in 1875, thirty-five miles from any base of medical supplies, six miles from the nearest neighbor, and before me a case of acute lobar pneumonia. There was no doubt as to the trouble. The invasion, starting with a chill had been followed by a temperature of 103 degrees; there was dulness in the upper third of the right lung, also an irritating cough, with the rusty sputum. So, there was the pneumonia, and I with nothing at command but some Dover's powder, about half a gallon of whisky, a heavy blanket, and of hot water aplenty. With these meagre means, I fought the

enemy for five weary days when my patient, a man of about thirty years, showed that he was on the mend. With nothing more than a nourishing diet prescribed, my man, three weeks later, rode on horseback into Yankton (Dakota) to pay me for my services—and he paid me liberally, too.

Now, this was *active* treatment in a well-marked case of pneumonia, and the result—recovery.

Brother Cohen received his medical education and training under the same teachers that I did, but he has practiced under more advantageous conditions. It is all very well to teach students the best plan of procedure, still, is it not equally important to show them what can be done in emergencies? Many men now in practice have to meet conditions that were not spoken of in their student-days, and, certainly, the clinical methods and means taught are not always available.

I cannot help but speak in this connection of the article by Doctor Cline printed in the March number, and I am glad to find myself supported by at least one experienced man in my contention that alcohol is one of God's greatest gifts to man; and I heartily agree with him in his concluding sentence, "that there has been nothing yet invented to take alcohol's place at the bedside."

I sure am glad to see that "laudable pus" once more has come into its own; it was a favorite theme with Gross and Pancoast, and, while I have practiced the teachings of Lister, I have, at the same time, seen many instances of good results in cases in which the "laudable pus" made its appearance. The line between infected pus and the pus that heals is easily recognized, as has been shown by the English surgeons mentioned; and this conception was thoroughly taught in my student-days.

The article on genital mutilation reminds me of an instance that happened in York County, Pennsylvania, in the late '60s. A certain Pennsylvania-Dutch farmer not only was a large manufacturer of progeny at home, but he wandered far in forbidden pastures. He was also a man who drank more alcoholics than was good for him, and on one occasion, when he was in practically a comatose condition from overindulgence in his favorite toddy, his wife removed one of his testicles with a butchers' knife, thinking thus to cure him of his wandering propensities. He got well, but some time after, his wife, when visiting in New York, being asked by a friend whether her operation had cured her sinning spouse, answered: "Nay! he is yust so bully as never vas!"

The case of "hysteria and its unique cure" recalls to my mind a similar occurrence in my own practice in Yankton, where I located after leaving the army. There was to be a dance, which the wife of one of my patrons desired to attend; but, for some reason best known to himself, the husband objected. The wife became suddenly ill, apparently losing consciousness, and I was hurriedly called. I found the woman lying upon a lounge, rigid, breathing scarcely was perceptible, eyes were half-open and the pupils rolled upward, a frothy sputum was on the lips, the jaws were fixed, the face was pale, and a cold sweat was on the forehead. Enquiring as to the premonitory signs, the husband told me of the ball, her strong desire to attend, his opposition; also, that the attack had come on without preliminary symptoms. My mind quickly was made up that we had here a case of hysteria superinduced by a fit of anger. So, I said to the husband, in a voice loud enough for the woman to hear: "Simon, go over to your brother's yard and get a good heavy shingle (they were then putting on a new roof), cut it about four inches wide and shape a handle on it, then fetch it along." While speaking, I winked and nodded to him, that he should comply with my orders. But, he asked, "What are you going to do with the shingle?" So, I said to him: "I'm going to apply the necessary remedy. When you return, I'll have you turn her over, raise her clothes, and then I am going to apply the paddle to her buttocks." "All right," he said, and started for the door. However, before he had taken more than three steps, the "sick" woman started up on her feet and made a dash for me, shouting "You damned brute"; and if Simon had not been so active in getting between us she would have given me some beauty-scars such as the students wear at Heidelberg.

I got a good fee, but the lady never again spoke to me after that. Her husband told me that she had been thoroughly cured.

I certainly regret to hear of the death of Sir Lauder Brunton, and also that our one-time correspondent Doctor Radue is no more.

W. T. THACKERAY.

Fowlerton, Tex.

CURE OF CANCER OF THE TONGUE

Three months ago, a man of 60 came to see me about a tumor on the center of his tongue. It had appeared about one year

ago and was beginning to pain a good deal. Cancer was in the family. The tumor was of the shape and size of a large bean. There was considerable tenderness under the tongue, but I could not detect any enlargement of the glands under the jaw. The tumor had the typical "feel" of a cancerous growth. I told the man that I intended to try something new for a few weeks, then, if there was no improvement, he should go to a surgeon.

Once a week, I painted the growth with compound tincture of iodine; but before the iodine could dry I cauterized the spot with a stick of lunar caustic. For use between times, at home, I gave him the following solution:

Iodine (pure)	grs. 5
Carbolic acid (pure)	dr. 1
Camphor	grs. 30
Compound tincture of benzoin, enough to make	oz. 1

I told the patient to apply this solution to the induration three times a day, regularly.

After six weeks, the tumor had disappeared entirely, and thus far it has not shown again. I wish you would have your therapeutic experts try this treatment and report results.

W. A. MARNER.

Miles, Iowa.

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[This certainly is a good clinical result and it is to be hoped that there will be no recurrence. However, three months is far too short a time to enable us to formulate a definite opinion as to the permanency of the improvement. In very many cases of tumor, iodine is of benefit. But, it is not always easy to select the cases that are suitable for this treatment and to decide what cases require surgical interference.—ED.]

GLONOIN AND ORIFICIAL TREATMENT IN FITS

Sometimes our success in the practice of medicine is so fine and so pleasing to us and at the same time so spectacular and so incomprehensible to the laity that we feel like telling the tale to THE CLINIC "family."

Last night at the somnolent hour of midnight, I was called by a messenger, who demanded that I "come over to see a lady who is very ill with heart disease." Going at once, I found a middle-aged woman perfectly rigid in a tonic spasm and speaking incoherently. I learned that she had been at work all the afternoon and evening helping with the arrangements for some function - the place, by the way, being a women's club room, and scores of beautifully gowned ladies were clustered around the patient.

They had gone through the usual rubbings and the soaking of the feet in hot water, even the stockings had been filled with wet mustard and drawn on to the feet. Everything they had done, though, did no good. They said it was heart disease, one thought it a stroke, and someone wanted to call an ambulance and send her to the hospital. It was like the madhouse when all the patients have disturbed spells.

Selecting two of the coolest-headed, I had them "shoo" out the excited flock and then learned that the patient had had the care of the table on her hands, and that she really had worked beyond her strength, thereby becoming filled with fatigue-toxins. In addition to this, she had eaten freely of all the good things and topped it all off with much ice cream.

I managed to get her to crush between the front teeth a granule of glonoin of 1-250 grain and immediately after to do likewise with two 1-250-grain granules of hyoscyamine. Waiting for ten minutes, I repeated the dose, as I was not sure that the granules had been crushed sufficiently to produce immediate effect. While I do not usually resort to a double dose, I did it in this case, because I wished to save time. Requesting the ladies to arrange the patient's underclothing so that I could reach the anus, I inserted both my index-fingers, back to back, until I felt that I was safely and completely inside the internal rectal sphincter. Then gently separating my fingers, I dilated the rectal sphincter. The patient screamed. The whole bevy of beautifully gowned dames rushed in to see her die. But, lo, the woman's rigidity had vanished, she became rational in a few minutes, and I had her sitting up in bed, with help on either side. Then, with two to help, she rose to her feet, and in less than half an hour she was being assisted to her automobile. I told them to give a large enema of warm salt solution and to wash out the bowels thoroughly when she arrived at home. I charged $4.00 (my usual fee for a night visit) and vamosed, as the Mexican says.

Now, doctor, you are puzzling over the treatment? Well, here was suspended animation from blood block. The blood, the splanchnic, the large organ clogged up. The glonoin and hyoscyamine dilated the capillaries. The dilatation of the rectum brought about potent action. The magical power of the Human Won't, which caused the abso-

ultely incompetent human will to get back into its proper job and carry on its proper life-function.

Read what I said about the Human Won't in the February number of this journal and do some hard thinking.

C. S. COPE.

Detroit, Mich.

MALARIA

Malaria has an extremely wide range of abode. Nearly the entire surface of the earth, excepting the two poles and the mountain-tops is infested.

The mosquito which serves as the carrier of the plasmodia appears to take great pride in his sole work, but this is not true. *Per se*, carrying plasmodia malariæ is only a side line with this "Citizen of the world."

In the course of this article we propose not to deal much with the etiology, diagnosis or prophylaxis of malaria, but to jump into the treatment, taking the rest for granted. Still, I want to call attention to the fact that three months, approximately, are required for incubation after the patient becomes inoculated. This was brought to my consciousness while traveling in the American tropics. Soldiers of fortune, or, usually, misfortune, coming to those intensely malarial regions from nonmalarial districts of the United States, would keep well for three or four months, then fall victims to the various types of malarial fevers. For this, the local physicians have been in the habit of using a dose of salvarsan, which gives the newcomer immunity for probably a year. I think sodium cacodylate would do as well. (See CLINICAL MEDICINE for 1914, p. 80.)

The fact that it takes three months to incubate malaria, led to the opinion in the south, that the fall dews of the cotton patch bring on chills. The truth is, that it is just the right time for the work of the summer mosquito to begin its activity. Any disease that requires three months to incubate is essentially chronic in character.

There are several manifestations of malaria that give the practician well founded cause for anxiety; chronic chills, hemoglobinuria, congestion and so forth, being the worst.

To clear the blood of malarial plasmodia, I have never used a remedy with so much certainty of cure as quinine hydrochloride with urea by intravenous injection, 10 to 20 grains at one dose. (For the technic see CLINICAL MEDICINE for 1916, p. 613.) From my experience, one to three doses used in this manner will cure any case of chronic chills.

In several instances, I have used one dose, and the patient, having become "weak-kneed" and refusing a repeater, then would probably have two or three chills more, after which they ceased magically. This goes to show that several days are required for the drug to accomplish its mission. Other patients never experience another chill. Anything that will cure chronic chills is good for all forms of malaria, as it will antidote the plasmodia.

In each paroxysm, there will appear conditions that have to be met according to the symptoms, with remedies applied "specifically"; or "symptom remedies," not disease remedies. Quinine hydrochloride with urea is to be classed as a disease remedy, as it will cure all forms of malaria, and it should be employed in every case.

This remedy should never be used in any other way than intravenously. To administer it intramuscularly may cause the loss of your reputation, although you will very likely cure the patient. People won't stand for the pain and boils that are produced by this method, without "cussin'" you. And they will mean it, too, proving it by sending for your "coworker" next time they need a doctor.

Why do so many doctors fail to cure chronic chills? Here is the reason and the only one. "It takes three months to get into the chills and it takes three months to get out." Physicians give the patient about two or three weeks' treatment and tell him to come back, and the patient takes all the medicine; and, hoping that he is well, he doesn't come back. In 14, 21 or 28 days he has another chill, and then tries your "coworker," declaring at the same time that Dr. So and So, is no good for chills. If you can't keep your patient under treatment for three months, tell him right at the start that you can not promise him a cure; unless you use quinine hydrochloride with urea intravenously; one to three doses being usually sufficient, given once a week.

Hemoglobinuria, swamp fever, black jaundice, are terms applied to a well known condition that represents disorganization of the blood and so forth, with which most southern physicians are painfully familiar. This condition must necessarily be met promptly with "specific medication."

To arrest the process, I have had good results with hypodermic ergot in full doses,

to give tonicity to the heart and other muscles. Follow with brisk elimination.

Here I will repeat what Dr. S. M. Waller, chief surgeon of the Hospital del Norte, told me while in Spanish Honduras.

"This hospital is never without cases of malarial hematuria, and we never lose a case if the patient gets here in reasonable time. Some patients come to us 30 and 40 miles on mule-back, and get here in a manner dead." Treatment: "We give them 30 grains of sodium hyposulphite, and repeat the dose every two hours until the urine clears up. Then four Warburg's Pills (without aloes) every two hours for one or two days. When the urine is clear, 1-3 grain emetine hydrochloride is given twice per day for a few days." With emphasis he says: "If we use quinine sulphate we will kill our patient; it is sure to reestablish the disease."

To my way of reasoning, it would be good practice for all physicians to recommend to their patrons who are going from a non-malarial to a malarial district with the intention of remaining any length of time, to have a few doses of sodium cacodylate administered intravenously in order to render them immune. It is easier to keep well than to cure.

T. H. STANDLEE.

Lyra, Texas.

INFLUENCE OF ALTITUDE UPON BLOOD PRESSURE

To maintain the full force of the blood throughout its ebb and flow in the human brooklets, there must be an equilibrium between the living clock-tick—the heart-beat—and the caliber or aperture of the arteries and veins.

Automatically in health and at the sea-level as the strength of the heart increases, the muscle-elastic walls of the arteries relax, or *vice versa*, as the need may be. Like the nozzle on the garden-hose and the pressure of the water-power behind it, the one balances or equalizes the other.

While this is true in general under average conditions, the effects of altitude and depression on the blood pressure is not so automatic. A possible difference induced Dr. Harley Stamp, of Philadelphia, to make two series of original observations as to the influence of either increased or diminished elevations on the individual's blood force.

In order to rule out muscular fatigue or any possible complication, the subjects were taken in automobiles, coaches or elevators very quickly up Pike's Peak, Tennessee Pass, and Mt. Rainier.

Nineteen persons examined at the higher elevations under absolutely similar conditions were found to be in two separate and distinct groups. Nine of those under observation were ladies of various ages, nine were men, and one was a boy of ten. The distribution of the sexes in the two groups was equal.

In one group, in descending from the higher to the lower altitudes, the blood pressure of both beats of the heart and the pulse beat all increased, while in the other group all of these fell.

In the study of these people, the remarkable fact appeared to Doctor Stamp, that there is an effort of the living anatomy to bring about a return to normal conditions of blood pressure.

In each one the average load of the heart at the lower altitude was 49 percent. There was a normal pressure on a further descent of from 3000 to 4000 feet. The main elevations and observations were taken at 1240 feet and 4662 feet, over a mile between. It was found that one group at 1240 feet above sea-level had an average blood pressure of 150 points or millimeters, while the other had an average of 125. The former fell to 130 at 4662 feet elevation, while the latter group exhibited a rise of blood pressure from 125 to 138 as they descended the mountain.

The physical condition of one group of subjects, however, was at variance with that of the other group. Perhaps this explains the different reports made by different research-workers in the effect of altitude upon blood pressure.

Descent of subjects some 2200 to 2600 feet down a mine shaft was the method to discover the effect of below the sea-level "altitudes." The pulse beat increased, but there was little, if any, mental influence due to the descent. Practically the same observations were made upon those who descended 2600 feet as had ascended 10,240 feet. Some suffered a continuous fall of blood pressure from 155 to 135, while others rose from 135 to 150 points. The average age of the subjects was about 39 years.

Evidently the essence of Doctor Stamp's work is to be found in the capacity of the human heart and its ramifying branches to adapt itself in health to even sudden changes of outside pressure. If the arteries, however, were hard and brittle, they would rupture, no doubt.

LEONARD KEENE HIRSHBERG.

Baltimore, Md.

Just Among Friends

A DEPARTMENT OF GOOD MEDICINE AND GOOD CHEER FOR THE WAYFARING DOCTOR

Conducted by GEORGE F. BUTLER, A. M., M. D.

[*Continued from April issue page 320.*]

"I HAVE less real difficulty in accepting the account of how Jonah was encompassed three days and nights in the whale's belly, where he made himself so disagreeable that his presence was no longer desired, resulting at last in proceedings being brought against him in ejectment, than in giving full faith and credit to some statements of fact made so positively by mathematicians and scientists. For instance, we are told by these precise gentlemen that light has made a record of speed of 175,000 miles in a second of time. As the gentlemen from Kansas would tersely put it, 'that's going some.' While not given to betting on another man's game, still, if this story can be authenticated, I should be willing to lay a small wager that some of these days, under right conditions, with the wind in its favor, this light-thing will do even a little better and lower its scientific record. Again, taking this almost inconceivable rate of speed as a basis, we are solemnly informed, and expected to believe, that some of the fixed stars are so distant from the earth that light traveling at the rate stated would require a full one hundred years in which to come from those stars and reach this planet. My unmathematical intellect staggers and reels at the mere suggestion, and I say, 'Give me the story of Jonah and the whale and I'll subscribe my sincere and abiding faith in that.' While it may lack verisimilitude, I can understand it. The other is beyond my comprehension, like the notion of the wealth controlled by men like Rockefeller and Carnegie."

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If the astronomer be asked to indicate a line of demarcation between the old and new astronomy, he will not hesitate to name the introduction of the spectroscope as the event. The development of this wonderful instrument and its application to the study of the heavens led the science of astronomy out into entirely new realms and completely changed our views regarding the stars. So, although it is not likely that any such sharply defined tangible line can be drawn between the old and the new science of medicine, yet, it is quite possible to demonstrate a set of concepts and methods and achievements that distinguish the new medicine from the old with just as marked a contrast as that with which the spectroscope divides the two eras of astronomy.

Doubtless the most fundamental difference —the one which underlies all other differences —is, the changed way in which we regard the nature and phenomena of disease. In former times, the conception of disease was almost wholly a subjective one. There being none but subjective means of recognizing disease— the word-description by the patient of the subjective effects which it had upon himself— it was natural and inevitable that the mind-picture which men had of it should be correspondingly subjective. And, even though this subjective phenomenon came to be clothed with somatic characteristics, it did not lose its essentially subjective character; it still was the patient who was sick within himself, with humors and cholers and such like, with little or no reference to the objective universe.

With the advent and rapid development of objectively applied instruments and methods of diagnosis, there came a reversion of attitude, and the pendulum swung to the other extreme. The swift and startling succession of discoveries, all indicative of the objective nature of disease, gave tremendous impetus to the pendulum's onward swing, which culminated in the enunciation of the germ-theory and the daring adventures in antiseptic surgery, all of which lent an ultra-objective cast to our conception of disease and threatened to relegate the patient himself to the role of a mere passive battleground of contending forces, in the struggles of which he had no personal part.

Of late, however, a truer, saner conception, formed out of the rational elements in both these former ones, has begun to take shape and is fast dominating medical thought and action. Its most profound significance is seen in the modern trend toward the biologic

aspect of pathology and therapeutics. Our latest, best, most scientific concept of disease, like that as to health, is that of a dynamic interplay of action and reaction between objective and subjective forces. The patient on the one hand and his environment on the other have assumed their proper relation—the subjective and the objective elements of disease have established each its relative significance.

This evolution of the conception of disease naturally was attended by a corresponding evolution in the conception of therapeutics; and the one is exactly paralleled by the other.

Under the subjective idea that the patient is sick within himself, that he "stews in his own juice," so to speak, and that all the forces and elements of his disorder are circumscribed within the limits of his own body, it was inevitable that the influence of drugs should be overrated and their use distorted and overdone. Therapeutics demanded the socalled "physiologic" action of drugs, which really means its mechanical mass-action, and this, without reference to the dynamics as between itself and the disease, overwhelmed the affected organ or function as by a static force and crushed it into submission or killed in the attempt.

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The recession of the pendulum to the objective conception of disease brought with it a corresponding reversion of attitude toward drug-therapeutics. If disease were but the clash of contending forces across the patient's body, of what use to pour medicine down his passive throat? To be sure, he would be subjected to a stress from merely lending his person, as it were, to the staging of the conflict; but, drugs could not have any specific influence over such a condition. It was just a question, with a shrug of the scientific shoulders, as to whether the constitution of the patient would stand the racket of contending elements. If it did, he would recover. If not, he wouldn't. So, with the exception of occasional emergency stimulation, practicians adopted a policy of "masterly inactivity," while textbook writers got into a way of stereotyping skeptical and pessimistic phrases concerning the treatment of disease.

With the last, best conception of the essence of health and disease, there came the deepest, truest insight into the real inwardness of therapeutics. Disease, as it now appears to us, is not a thing of internal humors and cholers, neither is it the crossplay of external elements with the patient's body as a battleground; rather, it is a play of action and reaction between subjective man and his objective environment.

There still remains, of course, the objective side to the problem; and, in the broadest interpretation, therapeutics includes anything and everything that influences this objective group of forces. But, in the generally accepted sense of the term, the man's end of the fight is the therapeutist's end. And, in the modern, intelligent understanding of the nature of the disease, he must help the patient, not by forcing isolated functions, but by stimulating and reinforcing the reactionary powers of the body against his objective foes.

So, we no longer are concerned with what the drug does to the sick man, but rather with what the sick man does in the presence of the drug; we no longer seek the action of a remedy, but its reaction; we do not give it for its socalled "physiologic" effect, but for its dynamic effect. And this new principle of therapeutics has brought about many changes in the practice of the art—for, therapeutics is an art, albeit based upon science, as music is foundationed on the science of acoustics.

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For one thing, this newer conception has enlarged the number and the range of our therapeutic remedial agencies. For, manifestly, if by therapeusis we understand the stimulation of the organism to successful resistance of morbid invasion or derangement, then every agent that has thus served to stimulate it or which may be reasonably supposed capable of doing so must be recognized and utilized as a therapeutic agent, whether it be a drug or a suggestion—and influence on the mind.

This enlargement of therapeutic possibilities has brought with it a corresponding increase of responsibility and need for intelligent discrimination. It admits of no rule-of-thumb treatment. It is not action, but reaction, that we are after; and organisms do not all react in the same way to similar agents. Under the lash of the whip, one man is stung to fresh endeavor, another sinks, fainting. In one, a kind word rouses ambition, in another, it feeds self-conceit. So with the measures and agents used in ministering to the body. Nothing short of a thorough understanding of all the conditions, an equally thorough acquaintance with one's therapeutic armamentarium, and an intelligent application of one to the other will suffice

the modern physician to meet adequately the situation.

The new system of therapeutics has brought about a few changes in the actual use and administration of remedial agencies, especially of drugs, which grow logically out of the dynamic principle.

First of these changes is, the almost universal adoption of the single remedy—by which not necessarily is meant that the physician gives but one drug at a time; that is not the true inwardness of single-remedy therapy. It is that, whereas formerly he mixed his drugs in vague, overlapping, hit-or-miss combinations, relying on the net result for the desired effect, the advanced doctor now carefully chooses each separate drug for a distinctive purpose and aims each one, like a bullet, straight at the bullseye, expecting (and, if he is a skilled therapeutist getting) the total effect of them all. Then, also, it is not action, but reaction, that we are after. It is perfectly easy, to be sure, to get action with a shotgun filled with grape-shot; but, intelligent reaction can be obtained only by placing single bullets, one at a time, with a carefully sighted rifle.

Equally logical, in carrying out this dynamic principle of therapeutics, is the revision which we have made of dosage. When drugs were given for their "action," when the finely organized dynamism of the body was regarded as so much inertia and medicines were hurled into it to overcome the inertia, the question of dosage naturally resolved itself into a determination of the least amount with which such action could be obtained and the largest amount which could be thrown in with safety. But with drugs given for their reaction, with the body regarded as a dynamic force-complex ranging all the way from the most delicate balance to the most furious vortex of motion which our medicines are designed to influence dynamically, dose itself becomes a dynamic quantity. The truth is, that under the modern conception of therapeutics the value of the term "dose" has been transferred to the other side of the equation; it no longer is a function of the therapeutic agent, but of the reaction.

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It is upon this modern conception of disease and therapy that I have based all of my scientific premises and drawn all of my clinical conclusions in my writings on the treatment of disease. If I ever write a book on treatment, it will be unique in the literature of medicine. Nowhere, so far as I am aware, is the entire field of treatment, including every recognized mode of therapy and an exposition of its principles and a description of its technic, assembled within the covers of a book.

My chief aim would be to furnish the practitioner in a single volume a complete and working-guide to every proven and efficient method of combating disease, so that he might at one time and in one place and with one effort avail himself of all that medical science has, at all times and in innumerable places and with multiplied labor, discovered and devised for the cure or amelioration of the various disorders with which he has to deal. In this book, there would be found full and lucid instruction for the application of every known therapeutic agent, from drugs to psychotherapy, to every pathologic condition in which these agents are severally indicated, with a rational explanation of its principle and a properly perspectived estimate of its importance and value—an ideal which, I repeat, is not, so far as I am aware, attained in any book on treatment extant. It would be unique, also, in the arrangement of its contents, in the broad, philosophic consideration given to the fundamental principles of therapeutics, and the sequential relations established between these principles and their particular application to specific pathologic conditions.

All of this I should endeavor to set forth in such a fashion that he who runs might read and that the wayfaring man need not err therein. Too often, textbooks on treatment are mere parroted formulas of empirical routine, little more than an elaboration of stereotyped prescriptions. And even when they furnish a fairly adequate set of practical directions for what to do the compilers are not careful to ground the practitioner in even an elemental understanding of the how and the why of his therapeutic procedures. This I should try to do, yet, not leave the other undone.

It would be affectation to pretend not to know that the style of this my book would be unique. Whether that would be an advantage or a drawback to its efficiency, would, of course, have to be left for the event to show. But, I have assumed, and I believe rightly, that the profession is a trifle wearied of the conventional, cut-and-dried, sing-song monotony of the ordinary medical textbook and would welcome a work in which the author had allowed himself the freedom of telling his story in his own way, unhampered by traditional usage or convention.

[*To be continued.*]

Among the Books

THOMPSON: "SYPHILIS"

Syphilis. By Loyd Thompson, Ph. B., M. D. Illustrated with 77 engravings and 7 plates. Lea & Febiger, Philadelphia: 1916. Price $4.25.

Without a doubt, syphilis is one of the most interesting as well as most important diseases afflicting mankind, and the author says truly in the preface of the book before us that today syphilis no longer is to be considered a genito-urinary disease, nor a dermatological disease, nor a disease belonging exclusively to any specialty, but that it is to be thought of as a disease requiring knowledge in every field of medicine. The truth of this statement is made plain by the fact that there is no organ or tissue in the entire body that is immune from the invasion of the virus of syphilis. No age is exempt from it, nor is there any station in life that confers immunity.

With the demonstration, by Schaudinn, of the treponema pallidum as the causative virus of the disease, and still more with the important experiments of Metchnikoff and Roux in transmitting syphilis to lower animals, an almost unlimited field of investigation was opened through which the etiology and pathology of syphilitic lesions could be studied more exactly than had ever been possible, and which encourage researches, like those of Ehrlich's, aiming at the development of a *therapia sterilisans magna*, although the latter in its application to syphilis still remains a dream the fulfilment of which is hoped for in the future. Much has been accomplished, however, and there is a large amount of new material, more particularly concerning the diagnosis and treatment of syphilis, which requires crystallization in textbook form.

This service has been rendered excellently by Doctor Thompson in his present volume. The chapter on laboratory-diagnosis is worked out with particular detail, in tacit acknowledgment of its great importance. In the matter of treatment, the author's wide experience has enabled him to discuss the subject practically and in a manner that makes it of value to the physician. The Reviewer was particularly pleased to note the sensible view held by the author as to the value of the Wassermann reaction in syphilis, since he holds, correctly, that it is but one symptom and but one link in the chain of evidence that must be interpreted in the light of the history and the clinical findings; and that it is not an infallible diagnostic of syphilitic disease, as has been asserted erroneously by overenthusiastic laboratory-workers, who, however, evidently lack practical experience.

The discussions in this book are lucid and concise. The author does not indulge in futile theorizing, but has presented a book that is of service, primarily, to the practitioner.

SIMON AND BASE: "CHEMISTRY"

Manual of Chemistry: A Guide to Lectures and Laboratory Work for Beginners in Chemistry. By W. Simon, Ph. D., M. D., and Daniel Base, Ph. D. Eleventh edition, thoroughly revised. With 55 illustrations, 1 colored spectra plate and 6 colored plates representing 48 chemical reactions. Philadelphia: Lea & Febiger. 1916. Price $3.00.

With the immense development of organic chemistry, the study of chemistry as a science has gained an importance immeasurably greater for the physician than it had a generation ago, and a textbook on chemistry can no longer be saved over from the days of college and, perhaps, tucked away in a dark corner of the bookcase, for it is frequently needed for quick reference and consultation. Among the various textbooks on the subject that are most familiar to American physicians, the one by the late Professor Simon has long been a favorite, and it even has gained in its high character through the cooperation of the junior author who, indeed, is responsible for the entire work of revision of the present edition, owing to the illness, ending in death, of Doctor Simon.

The information presented in this textbook is wide and sufficiently concise not to lead the physician-reader beyond his depth. The chapters on organic chemistry particularly are of interest and this attaches more especially to the chemistry of alkaloids to which the fifty-

third chapter is devoted. This textbook on chemistry is of great value to practicing physicians, even though it was originally written only for students of medicine, pharmacists and dentists.

NORRIS: "BLOOD PRESSURE"

Blood Pressure: Its Clinical Applications. By George William Norris, A. B., M. D. Second edition, revised and enlarged. Illustrated with 102 engravings and 1 colored plate. Philadelphia: Lea & Febiger, 1916. Price $3.00.

The importance of blood-pressure readings in diagnosis, prognosis, and treatment is gaining increasing recognition, not only in hospitals, but among practitioners, and this recognition is shown by the interest aroused by the various treatises on the subject that have been published within the last few years. This second edition of Doctor Norris' work was necessitated less than two years after the publication of the first edition; which only is another testimony to the favor in which the routine employment of blood-pressure readings is held. In the present book, the principles involved are clearly elucidated and every practical application is pointed out with great care. It goes without saying that much is still to be studied and that no textbook on the subject of blood pressure can pronounce the final word on all its problems. However, it is well to have in an accessible and useful form the information that has been gained by means of study.

FAUGHT: "BLOOD PRESSURE"

Blood Pressure, from the Clinical Standpoint. By Francis Ashley Faught, M. D. Second edition, thoroughly revised. Philadelphia: The W. B. Saunders Company. 1916. Price $3.25.

Doctor Faught is one of the best-known students of blood pressure and has done much to popularize this method of clinical study among physicians. His work is well known and it need only be said that the second edition has been enriched by the introduction of a larger amount of clinical material, including many new charts illustrative of various types of blood-pressure changes that go far toward enabling the reader to acquire a more practical view of the subject.

In this, as in the book by Norris, the behavior of blood pressure in various diseases is discussed and its importance pointed out. Of special interest to the physician, will be found the chapter on the therapeutic value of drugs affecting blood pressure and those commonly employed in cardiovascular renal conditions. This volume, like the one discussed in the preceding review, can be recommended most cordially to the consideration of practitioners.

THE MEDICAL CLINICS OF CHICAGO

The two articles in this number (Volume II, March, 1917) which appeal most strongly to the Reviewer are the first and the last, the former being a report of a clinic of Dr. Frederick Tice, on anaphylaxis; the latter being a talk by Dr. Joseph C. Friedman on the diagnosis and treatment of chronic constipation. Both articles should be studied carefully.

Doctor Friedman considers in detail the two main types of constipation: first, that in which the passage through the colon is delayed, or the socalled colon-type. This delay is, practically, always in the descending colon and is due either to insufficient stimulus or inability of the colon to respond to that stimulus (atonic type), less frequently to an overresponsive (spastic constipation); second, that in which the act of defecation is incomplete (dyschezia), in which weakness of the abdominal muscles is the most frequent causative factor.

The Reviewer has read Doctor Friedman's explanation of the causes and his classification of constipation with much interest and is impressed with the practical value of the treatment recommended by the author.

The present issue of these *Clinics*, consisting of 227 pages, contains 40 serviceable illustrations. It is published bimonthly by The W. B. Saunders Company at $8.00 per year, in paper, or at $12.00, in cloth.

HEMENWAY: "AMERICAN PUBLIC HEALTH PROTECTION"

American Public Health Protection. By Henry Bixby Hemenway, A. M., M. D. Indianapolis: The Bobbs-Merrill Company. 1916. Price, $1.25.

The author of this book wishes to arouse the people to a realization of their selfish interest in efficient public-health administration. In order to further and attain this purpose, he has dedicated his book to the women of America, as "the power behind the throne," who have done much, in the past, to assist in securing better conditions.

In unfolding his argument, the author

shows with particular insistence that the prevailing custom of appointing physicians as sanitary officers, without remuneration or at a nominal stipendium, is a serious and costly mistake, since the duties of physician and of sanitarian by no means coincide; indeed, they very often are most decidedly at variance. Moreover, the duties of the sanitarian, who is to prevent disease, particularly epidemic disease, require special training of a kind that is not a part of the medical curriculum and which, besides, is becoming more and more diversified and specialized.

Doctor Hemenway advances a plea for specially trained health-officers for every community, whose duty it should be to protect the people from preventable diseases. Undoubtedly, his position is sound and just. Already several universities offer special courses in hygiene and sanitation leading to the degree of Doctor of Public Health, in which the students are trained with regard to the requirements of public-health work.

This new specialty is being developed rapidly, and as a result the prevalence and incidence of preventable diseases may confidently be expected to diminish in time. Under modern conditions, it is realized that these diseases constitute a socioeconomic waste; consequently the demand for their eradication will become more emphatic with the coming years. Doctor Hemenway's book is a strong and ardent champion of the trained health-officer and of the prevention of disease.

WOOLLEY: "HANDBOOK OF COMPOSITION"

Handbook of Composition. By Edwin C. Woolley, Ph. D. Boston: D. C. Heath & Co.

In ordinary conversation, there are few persons, outside of purists, who do not permit themselves little liberties of expression which, if not necessarily ungrammatical nevertheless do not have the sanction of ideally correct usage. This is pardonable, even permissible, in everyday speech; indeed, it may be said to be unavoidable, because we are strongly under the influence of the tendency manifested by every living language to develop, to change, and to grow. This does not necessarily include the indiscriminate use of slang, although it cannot be denied that slang has enriched the English language in many ways and has made it more expressive.

In formal speech, on the other hand, and in writing, conditions are quite different, and then it depends entirely upon the purpose of the speech or the writing whether liberties may be taken or whether a strict adherence to "good English" is demanded. Certainly, in a lecture, an essay or a book on a serious topic, in fact, anywhere except in socalled dialect stories, written English should always be at least grammatically correct; indeed, one can not conceive of any contingency that could excuse ungrammatical expressions.

In writing letters or in preparing manuscripts for the press, it is incumbent upon the writer to make use of as good English as he can command, because undoubtedly much of its effect depends upon the form in which the written thought is clothed and upon the clearness with which it is expressed. This has just found support in a sentence encountered in one of the leading British medical journals, where it says, "One realizes how much suffering humanity owes to the laboratory chemist and to intense drug-therapy." Evidently, this sentence is awkward, for while it means to assert that suffering humanity owes much to the laboratory chemist, it might be construed to say that humanity owes much suffering to the laboratory chemist; thus necessitating a second reading and interrupt the current of thought.

It is unavoidable that, with the best intention, a first writing may contain some crudities and even inaccuracies that should be deleted or corrected on revision. One may be uncertain concerning certain forms of speech or the proper sequence of clauses; in short, many problems constantly occur to every writer that may be solved upon second thought, but which also may call for the decision of authority. As a guide on such occasions of doubt, this "Handbook of Composition" by Professor Woolley, who was a teacher of English at the University of Wisconsin, will prove an excellent umpire, since it discusses in a clear and pithy manner virtually all possible inaccuracies and crudities of speech and illustrates the bad and the good by concrete examples. The title page enumerates as follows: rules regarding good English, grammar, sentence structure, paragraphing, manuscript arrangement, punctuation, spelling, essay writing, and letter writing. The Reviewer has studied Doctor Woolley's little book with much satisfaction and intends to keep it upon his desk for ready and frequent reference. He recommends it most cordially to every physician, whether he write for medical journals or not, because, medicine being one of the socalled learned professions, it is almost inexcusable that physicians should justify the reproach of being notoriously careless in their writing.

Condensed Queries Answered

While the editors make replies to these queries as they are able, they are very far from wishing to monopolise the stage and would be pleased to hear from any reader who can furnish further and better information. Moreover, we would urge those seeking advice to report their results, whether good or bad. In all cases please give the number of the query when writing anything concerning it. Positively no attention paid to anonymous letters.

Answers to Queries

ANSWER TO QUERY 6270.—"Trophoneurotic Eczema." Concerning query 6270 (January) under the above heading, I should advise, in addition to the cleanup and treatment for the digestive tract, to inject into the veins sodium cacodylate two or three times a week, if the patient's kidneys will stand it; beginning with 3 or 4 grains per dose, and after a while raising this to 7 grains. It won't fail, I assure you.

S. E. EMBRY.

Rock Island, Ill.

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ANSWER TO QUERY 6301.—"Refractory Menorrhagia." Looking over the doctor's treatment, it seems he had the correct therapy for his case, but probably not continued long enough. I allude to calcium, not especially calcium cacodylate, but calcium salts in general. Sajous tells us that calcium is quite a constant constituent of the menstrual flow and that the amount contained in the blood rises and falls between and at the menstrual flux. Again, we know that calcium metabolism is directly influenced by the thyroid gland, and that the latter is one of our defensive builders and suffers from acute disease. The patient's thyroid gland must have been very much influenced by her measles and also by the changes occurring subsequent to her age—13. Therefore, I suggest: Thyroid gland (desiccated) 5 grains three times a day, and calcium lactate, 5 to 30 grains, in solution, three times a day. Watch closely for hyperthyroidism, and if signs appear, intermit the treatment. I feel very sure that the woman will secure results from such a course.

G. C. GILFILLEN.

Russellville, O.

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ANSWER TO QUERY 6301.—"Refractory Menorrhagia." Noticing Query No. 6301 in the April issue, I want to offer a suggestion for what it is worth. A number of colleagues and myself have recently been using "mammary extract," with success, in certain forms of menorrhagia. The case in question, although it has proved refractory, would seem to me eminently suited for a trial. Push the remedy at first until the patient complains of dull headache or loss of appetite, then moderate so that there is no discomfort. Give the remedy steadily for about six weeks, then abide results. If the remedy should be tried out successfully, I should be pleased to hear.

W. H. BOECKERMAN.

Milwaukee, Wis.

Queries

QUERY 6302.—"Goiter." T. G. R., Canada, adverts to the assertion that "for simple goiter, few remedies will give the results that can be obtained from calcium iodide," and expresses a desire to learn more on this subject. The region where he resides lies on the eastern slopes of the Rocky Mountains and the drinking-water is heavily impregnated with carbonate of calcium and magnesium; which, as he thinks, is the cause why about one-half of the young women contract goiter in the course of the first three years of their residence there, girls coming there under twelve years of age apparently being particularly susceptible to the disease. The young of the domestic animals, we are told, also fall victims to goiter, so that evidently the disease is endemic.

Any course of treatment appears to be unavailing as long as the patient continues

to imbibe the "infection," but possibly some medication combined with the drinking of distilled water, the Doctor suggests, might prove beneficial. He expresses the belief that our first procedure should be to attempt to stay the spread of the disease, and this, he assumes, "might be accomplished, in the cities, by placing the people on distilled water solely; but, in a population and in a country sparsely settled the cost of distilled water would be prohibitive. Hence, we have to discover some cheap, easy, and effective process to destroy and precipitate those noxious salts, for removal by sedimentation or filtration. To demonstrate his idea: "Boiling, for instance, would precipitate the calcium carbonate; the addition of sodium carbonate would change the magnesium sulphate into a carbonate, which would precipitate. Then the addition of alum would take care of the magnesia. But this method is cumbersome. Can you not suggest some combination in tablet-form to be simply dropped into the water, while eliminating the boiling? It would have to be a general service that would reduce the lime in the general average of waters to below the danger-point."

Water containing calcium is prone to cause goiter, if drank for a long period. Thus, in some of the cantons of Switzerland, about 70 percent of the population are goitrous. In certain parts of Colorado, goiter is extremely common, and some observers attribute the condition to drinking-water that has filtered through chalky strata; however, investigation has proven that hundreds of people in that region have drank such water without becoming affected with goiter.

Some bacteriologists are inclined to attribute the prevalence of goiter in certain districts to the presence of particular bacteria that seem to be most frequently present in water issuing from chalky deposits and then flowing over the upper soil. For instance, in Denver, the water flows down the mountains and is exposed—at least in many instances—to contact with chalk. It is quite possible that the causative organisms thrive more abundantly in waters that are strongly charged with calcium salts.

The whole subject, it is clear, requires thorough investigation; still, it is practically safe to assert that people drinking from deep wells in chalky soils do not, as a rule, develop goiter, whereas individuals consuming surface water in a chalky country frequently are goitrous.

More recently, large doses of quinine and ergotin, alternated with sparteine and iron arsenate or iodide, have been recommended in medical literature. Also, various suprarenal-gland preparations have been tested and unquestionably have proven beneficial where there was lowered arterial tension.

We should be inclined to place every person showing signs of bronchocele upon distilled water. Give calcium iodide in rather full doses, with quinine hydroferrocyanide and phytolacca as alternants. Ointment of potassium iodide may be applied by friction or the negative galvanic electrode may be attached to a compress saturated with the potassium-iodide ointment and this placed directly over the goitrous area.

Referring to recent studies on the subject under consideration, it is probable that you have already seen Macphail's paper, which appeared, in 1911, in *The Canadian Medical Association Journal* and recounts the experiences of Dr. G. A. Charlton, provincial bacteriologist at Regina, who spent several months traversing the island of Montreal and making an unofficial census of the villages as to the prevalence of goiter.

From the results, as published at the time by Doctor Charlton, it appears that he found goiter entirely absent along the shores of the island and wherever the inhabitants obtained their water from the St. Lawrence or Ottawa river; whereas it was common in the more centrally situated villages. Here again a distinction was to be made out. Only where water was obtained from shallow wells in sandy soil did goiter prevail; where the wells were deeper and in the glacial clay it might be entirely absent. Doctor Charlton came to the conclusion, therefore, that the underlying silurian rock is not the essential factor, although, curiously enough, goiter throughout the world is likely to occur in regions over limestone formations.

Macphail decided that something further is necessary, something presumably of organic nature; water of shallow wells, of course, being richer in organic matter than that of deep bores. Charlton states that in the village of Point aux Trembles, where goiter was previously prevalent, it disappeared when the water was piped into the houses from the St. Lawrence.

You are doubtless familiar with McCarrison's researches and possibly have read his lectures on the subject, delivered before the Royal College of Physicians, London, January 7, 9, 14 and 16, 1913. In the initial lecture, he tells of observations he had made, which "convinced him that endemic goiter is due to a living exciter." These lectures

("The Etiology of Endemic Goitre") were reproduced in *The Lancet*, January and February of that year (1913).

McCarrison administered suspended matter, removed by filtration from known goitrous waters at Gilgit, to himself and a dozen other healthy individuals. As a result, he and three others developed enlargement of the thyroid in from thirteen to fifteen days. The experiment was repeated in a larger number of individuals, a greater proportion of whom developed the goitrous condition, while others suffered from thyroid hypertrophy of a transitory character.

Of course, a causative agent which is removed by filtration and destroyed by boiling can be of other than a microbic nature and in support of this view, McCarrison presented photographs of a goitrous youth before and after treatment by the bacillus bulgaricus. A writer of *The Public Health Journal* remarked at the time: "The world seems getting very small when the latest fashionable method of employing Satan to drive out Beelzebub is being used upon the natives of Cashmere."

McCarrison's idea was that we have to deal with some intestinal saprophyte derived from the water, whose toxins, absorbed in the alimentary canal and circulating in the blood, have a specific action upon the thyroid gland. When the patient is removed to another region or otherwise gains a new intestinal flora (or fauna), these toxic substances being no longer produced, the organ returns to its normal state.

It is interesting, in this connection, to know that recently physicians in various parts of the country have reported remarkable results from the administration of distilled or mineral water and an active preparation of the bacillus bulgaricus.

In Falta and Meyers "The Ductless Glandular Diseases," the chapter dealing with "The Cretinic Degeneration," gives the most interesting figures taken, for the most part, from the works of Ewald and Bircher, and these and other established facts, point to a common etiological factor in the different forms of cretinic degeneration. The author points out, however, that there cannot be an agreement as to the question whether the manifold manifestations of the cretinic degeneration are called into existence only by the mediation of the strumous degeneration of the thyroid gland, or a part of these are directly produced by the strumous noxa and thus are coordinate with the struma.

It is pointed out that the cretinic degeneration is found in Europe, especially in the Alps, Carpathians, the German middle mountains and the Pyrenees; also in other parts of the earth the goiter districts lie in mountainous regions. Moreover, the goiter districts change; localities that were formerly infested, become goiter-free, and conversely. Sometimes there occurs an epidemiform breaking out. Persons coming from a non-goiter neighborhood into a goiter neighborhood often develop goiter or become affected with it after their return. Instructive examples are quoted from the writings of Bircher and Breitner.

It is concluded that the noxa of goiter is to be found in the drinking water.

"In the goiter territories there exist indeed especial goiter brooks; there are numerous examples in the literature of goitrous communities becoming free of goiter after they had established drinking-water conduits from goiter-free vicinities.

"The occurrence of the goiter noxa in the water is bound together with a definite geological structure of the soil. This view has been especially promulgated by Bircher, Jr., on the ground of his penetrating studies and excellent observations. According to Bircher, cretinic degeneration is found only upon the marine deposits of the paleozoic ages, the dryassic and the tertiary ages, while the eruptive formations, the jurassic and freshwater deposits, are free from the noxa. This view is not generally shared, but is, however, set upon a working basis by the works of Johannesen and latterly by Bircher, Jr., and Lobenhofer. The practical significance of the investigations of Bircher, Sr., is seen at its best in that the community Rupperswiel has become goiter-free since it has led its water from springs lying in jurassic deposits. A like example is furnished by the village Asp.

"Previously healthy animals may become goitrous on having goiter water furnished to them. The goiter noxa goes through a Berkefeld filter; it is destroyed by temperature higher than 70° C. (E. Bircher.) Therefore it is likely, as Wilms first assumed, that the noxa is not a miasma, but a toxin or toxalbumin from an organic substance. "It does not dialyze, therefore behaving like a colloidal emulsion. The struma produced shows histologically changes that are degenerative, and, on the use of weaker goiter water, also hyperplastic. The animals developed cardiac hypertrophy, and many remained behind in growth."

The preponderance of evidence would seem to show that infected waters are not so on

account of any geologic formation, but from the presence therein of a living growth, whether bacterial or protozoal, as yet to be positively demonstrated.

It must be borne in mind that it passes through the pores of a Berkefeld filter, and seems to be highly resistant to heat, at least 70° C. being necessary to render the water innocuous.

Articles which doubtless will be of interest to you are:

Robert McCarrison—"The Experimental Transmission of Goiter from Man to Animal." Proc. Royal Soc., 1911, vol. 84, p. 155.; cf. *Zentrlbl. f. Biochem. und Biophys.*, 1911, xii, 7/8, p. 275.

C. Davidsohn—Virchow's Arch., 1911, Bd. 205, 170; cf. *Zentrlbl. f. Biochem. und Biophys.*, xii, 1911, 7/8, p. 275.

Ch. Repin—"Goitre Expérimental." Soc. Biol., 1911, Bd. 71, p. 225. (1014.) *Zentrlbl. f. Biochem. und Biophys.*, 1911, xii, 7/8, p. 275.

We are inclined to believe that you might obtain some useful information by addressing the Surgeon-General's Library at Washington, D. C.

From the facts herewith presented, you will readily understand that we do not believe the additions of soda, alum or any chemical would render infected water potable. We have not in available form sufficient clinical data to enable us to venture a statement as to the percentage of the number of cases of common goiter cured by treatment with iodine inunctions and other forms of iodine medication, but during the past ten or twelve years hundreds of such cures have been reported and it is safe to say thousands of physicians throughout the United States administer calcium iodide to goitrous patients as a matter of routine.

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QUERY 6303.—"Thiosinamin in Stricture." A. J. J., Wisconsin, has seen the use of a bougie containing thiosinamin, thuja, and resorcin recommended for urethral stricture. He wishes to know whether such a combination of drugs is likely to prove beneficial. Or, if not, what would be the best thing to use?

This writer has experimented rather extensively along this line and doubts the desirability of using thiosinamin in the urethra. Bougies containing papayotin, glycerin of pepsin, and so on, have also been tried, but the results were not satisfactory.

Thyosinamin injections could be given only when the fibrous form of stricture is present. Mild inflammatory conditions, with engorgement of a limited area of the mucosa, will almost always yield to eliminants, sedatives, and the injection of a solution of lobelin concentration or lobeline sulphate, and the passage of cold steel sounds.

Thymol iodide in an oleaginous solvent may be applied with advantage; also ichthyol will prove useful in earlier stages of stricture.

While it has proven undesirable to introduce thiosinamin into the urethra, very good results have been secured by the hypodermic use of this drug, a carefully prepared solution of which should be employed. The skin over the area of injection (the glutei or loose tissues of anterior abdomen) first is cleansed thoroughly with alcohol; then, with a sterile, all-glass syringe and sterilized needle, inject 5 to 10 minims of the solution very slowly. Do not massage the tissues. Inject, alternately, on opposite sides of the body, every second or third day.

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QUERY 6304.—"Sarcoma Ischiorectal Abscess with Multiple Fistulas." P. E. G., Texas, presents two cases for comment, as follows: Case 1. "Patient, twenty-two years old; twelve years ago, noticed a rough-looking growth on the inside of his right cheek; also suffered from severe toothache. Gradually there has developed a growth, seven inches long, stretching the skin downward three inches across; the lower teeth have gradually been carried outward and project in front. Part of the inside of the left cheek has sloughed off. Some doctors have called this 'cancer.' I do not know what it is, nor can I think of any treatment excepting palliative.

"Case 2. In the second case, which is of four years' standing, several openings exist in the region of the buttock, close to the lower part of the ischium and gluteus maximus muscles. Itching is severe during warm weather. The parts surrounding these openings are very hard. The patient has some fever. There is general pruritus at night."

In each case, prompt and radical surgical procedure is necessary. In Case 1, it is possible that excision of the affected half of the lower jaw may save the young woman's life. The exact character of the neoplasm can be ascertained only by microscopic examination, but it is probable that you have to do with an odontoma or osteosarcoma.

In the second case, you have multiple fistulas, as a result of an improperly treated ischiorectal abscess. These must be laid open throughout their entire course and the wound packed with iodoform gauze, to prevent bridging over and reformation of the fistula. In this case, quite extensive incisions would seem to be necessary.